

71522




Class _____ No _____

Presented by

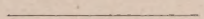
Dr. Edward Martin

200



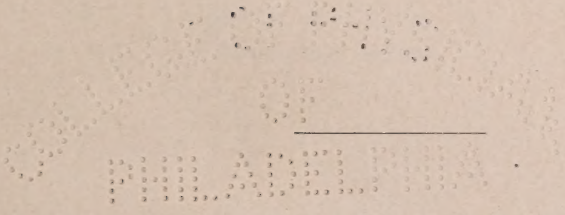
Digitized by the Internet Archive
in 2014

INTERSTATE MEDICAL JOURNAL.



VOLUME FOURTEEN

JANUARY-DECEMBER, 1907.



PUBLISHERS
INTERSTATE MEDICAL JOURNAL CO.
ST. LOUIS, MO.

FROM 10 12 14 16
TO
APRIL 1944

EDITED BY .

NATHANIEL ALLISON, M. D.

IRVIN V. BARTH, LL. B.

MALVERN B. CLOPTON, M. D.

HUGO EHRENFEST, M. D.

WALTER BAUMGARTEN, M. D.

MARTIN F. ENGMAN, M. D.

ALFRED FRIEDLANDER, M. D.

CARL FISCH, M. D.

JOHN GREEN, JR., M. D.

H. MCC. JOHNSON, M. D.

JESSE S. MYER, M. D.

WARREN B. OUTTEN, M. D.

WILLIAM E. SAUER, M. D.

SIDNEY I. SCHWAB, M. D.

PHILIP SKRAINKA, M. D.

ALBERT E. TAUSSIG, M. D.

OTHO F. BALL, M. D.,

Managing Editor.

AUG 7 - 1908

71522

INTERSTATE MEDICAL JOURNAL.

VOL. XIV.

JANUARY, 1907.

No. 1

ANNUAL MEDICAL PROGRESS NUMBER.

PART I.

A REVIEW OF THE MEDICAL LITERATURE OF 1906.

EDITORIAL.

ANNOUNCEMENT.

A résumé of medical progress has a two-fold purpose. It brings home to the physician in general practice, burdened with duties and obligations destructive of much leisure for reading, the multum in parvo for the current year; it also has a compactness that makes it a good reference book in case the afore-mentioned busy physician wishes at any time to refer to a subject, the memory of which may have escaped him.

The popularity of the Annual Progress Number has been so gratifying that the editors feel a departure from the usual custom of publishing the Annual Progress Number in one issue will not be judged amiss by the public. This year the intention of the editors is to have not only a January, but also a February number. In this way the fourteen reviews will be equally divided.

The advantages derived from this innovation will, we feel sure, be appreciated by all our readers. Published in two issues, the Progress Number, while having the same interest as heretofore and permitting each subject to occupy more space, will be materially lessened in bulk and weight.

THE TREND OF MEDICAL JOURNALISM.

That the tendency in medical journalism is an upward and not a downward one, means much to those who are attempting, through rather muddy waters, to guide the good ship to a safe port. There was a time, not many years ago, when a medical journal consisted of an ill-assorted mass of articles manufactured purposely not to offend the susceptibilities of its gentle readers; and this was sandwiched between a conglomerate

eration of advertisements, upon the face of which was written, in large, fat letters, the commercial intensity, the scientific apathy of the editor and manager.

Those were the days when a non-discriminating public was willing to sacrifice its best attributes of common sense and fair play, in its zeal to lend patronage to any journal that would publish an article by a physician who had friends in the profession, be he devoid of ideas and have a literary sense on a par with that of the ordinary child.

Fortunately for us, those dark days are almost over and few, if any, of our journals of recognized worth are guilty, at intervals, of a like misdemeanor. And misdemeanor it was, for its continuance by the editors and toleration by the public meant just so much prostitution of a branch of literature as important as belles-lettres, the scientific or the historical.

Even though we of today suffer on account of the literary ignorance and insatiable commercialism of the editors of yesterday, we should take hope, since the prejudices against us are fast crumbling away, and support is not wanting from a public, the better elements of which, as a result of education, are fortunately dominating those who still are in the fourth estate as regards enlightenment.

A pertinent question which has often occurred to us is this: Why should not a medical journal reach the high literary level of the purely literary weekly and monthly? If it is our desire to conserve the virility and intrinsic beauties of our mother tongue, the matter of the constructive principles of a language should be paramount. Furthermore, ease and felicity of expression combined with refinement would do much to place our representative medical journals in the same rank with other thought-compelling publications. When this is done, we feel all caviling will be silenced, and the best medical thought will not be confined, as it is generally now, to the journal in which it originally appears, but find a larger audience, in its reprinted form, in the weightier literary weeklies and monthlies.

Ideas, though strictly medical, are not necessarily independent of the currents of thought permeating the world today. Rather do they bear a decided relation to other thoughts, an interdependence, so to speak, which invests them with supreme importance. Granting this, it can readily be seen that the adoption of a medical idea by a literary journal is furthered by a proper presentation of the idea. Too often we have come across good ideas hidden away in articles, which, under the guiding hand of a kindly literary monitor, could have been made lucid enough to be of practical benefit to mankind. Therefore, it is not a superfluity to assert that recognition of the moment of a medical idea by the world of thinkers and philosophers, and the world in general, cannot take place until the idea is presented, not in a palatable, popular manner, but with a dig-

nity derived from a verbal expression, whose every tone and shading shall have an appeal to the student of the deeper things of life.

As soon as medical journalism achieves this ideal, a happier state will be inaugurated. The dissemination of ideas will not then depend, almost entirely, on a daily press, which, to please its superficial readers, must perforce popularize an article, but be countenanced by a proper appreciation from the intellectual of a community, an appreciation ever ready to make obeisance to ideas, when the science thereof attracts on account of a setting informed with clarity, simplicity and directness.

To help the recognition of the equal rights of medical journalism with journals representing literature in its highest walks, the editorial department should play no minor part. Its special page, while purely impersonal, should reflect the trend of thought, not only of the journal in which it appears but of the best in the medical world. Its dignity should convey a lesson to the writers of screeds and lampoons; ought to show them, in fact, that medical journalism today can succeed without the unnecessary personalities so decidedly detrimental to medical publications in the past. For no greater praise can be meted out to a journal than to say of it that its message bears upon its face the exoteric words,—uprightness, honesty, probity.

TRADE-UNIONISM IN THE PROFESSION.

Sir Victor Horsley in his address, delivered on December 12th in the Medical Library of the Sheffield University, showed to a surprising and gratifying extent his contempt for the odium which good Britishers, recently retired from business, entertain for the word "trade." Now "trade" looks innocent enough at first sight, but due to insular prejudices it has arrived at a meaning whose equivalents are sordidness, meanness, and smelliness. That aristocratic minds should take offense at the word "trade" is in keeping with a number of prejudices placed before us to serve as stumbling blocks on the road to progress. But aristocratic minds should be foreign to a profession whose every method and manner breathes democracy.

To better the lot of the rank and file in the profession Sir Victor proposes trade-unionism. After years of experience as a surgeon he feels that he is in a position to utter certain truths, and though his courage is highly commendable, we fear that in blasting the beautiful idea entertained by many patients, that doctors really prefer honor and gratitude to money, he is depriving himself of some of his popularity. In every community there are a number of people who will be quite shocked when they read how Sir Victor views the problem of a livelihood for the physician. Quite often good and honest people pay their butchers and

grocers at once, not because it is a matter of conscience but because the state of their stomachs is uppermost in their minds. This obtaining daily, we might say, the general practitioner is compelled to wait until the good and honest people realize that he, too, is worthy of a remuneration.

That Sir Victor feels the time has come when the idea of the practice of medicine should be stripped of all the foolish chivalry and romanticism, given thereunto by kindly disposed individuals, is evident in all his lines. In fact, the burden of his preachment is against that ever present class, which as a protection against paying their doctors, is most unwilling to enshrine the art of medicine with other mundane arts.

Trade-unionism would mean fair pay for the struggler, a compensation which is denied him under present conditions. That the beginner and he who never reaches the top of the ladder in the profession have but a poor show when emoluments are considered, is a fact that cannot be disputed. This is not peculiar to the medical profession; it is more or less characteristic of all professions. But in medical circles its evidence is glaringly prominent, for the reason that custom has placed many restrictions on the remunerations the smaller fry of doctors ought to receive. So diffuse is this knowledge that even patients, who are ignorant of the many things they ought to know, are surprisingly well informed when the attending physician, handicapped by modesty and by the fact that his name is not famous, sends in his bill. Their excellent work has done much to deprive the physician of his just dues, and though we cannot make an asseveration, we feel that their attitude is somewhat strengthened by previous conversations with medical men of name and fame.

The upper-dog must talk; it is a quality which becomes a virtue with him on account of his exaltedness, but unfortunately his talk is not always of the right sort; often, sad to relate, it is a combination of self-adulation and self-congratulation. Although the virtue, after a number of years, deteriorates into mere drivel, the wrong is done; young men suffer, the eclipsed drag on their weary way to be the butt and ridicule of all classes.

Should Sir Victor's idea of trade-unionism be taken up and prove successful, he will invite some scorn, some hatred, some denunciation. He will be considered a disagreeable person by those who are in power, their assertion, no doubt, being based on Lord Beaconsfield's definition of an agreeable person. But to the thousands, who are working heroically to earn money in an honorable manner, his name shall stand with him of kingly birth, Lear, whose hand had "the itch of humanity."

ORIGINAL ARTICLES.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

It is gratifying to note, and attention should be called to the fact in discussing the progress of medicine during the past year, that internal medicine is rapidly receiving recognition in this country as a specialty. In Europe "Innere Medicin" of the Germans has been looked upon as a specialty for many years. Although, for a number of years there have been a few physicians in our larger cities who might, in the true sense of the word, be considered specialists in this branch, only recently has a large number taken up internal medicine in the incipiency of their careers. In the past, internists became such through the elimination of other work. Now, however, hundreds are entering the field with a definite view to making internal medicine their specialty. We consider this the greatest evidence of progress in medicine. The field is a broad one, and those entering it recognize the importance of the broadest possible foundation. It is unlike most of the specialties, in that it covers the entire organism and in that the diagnosis usually entails a most careful examination of the entire physical being. Not only this, the internist must be thoroughly posted in laboratory methods of diagnosis, which in itself promises to become a specialty in the not distant future. Every case, therefore, with which the internist comes in touch, calls for a careful examination of the important systems of the body, and the necessary laboratory examinations. The number of patients, therefore, that an internist can and should see is very limited, if he would do his work conscientiously. There is no doubt but that the sins of omission in the practice of medicine are vastly greater than those of commission. The greatest mistakes that are made are of a passive, rather than of an active character, are made through negligence rather than through ignorance. That physician who overlooks a beginning nephritis, an incipient tuberculosis or an early valvular lesion, through an incomplete examination, commits by far a greater error than he who prescribes an overdose of a drug. The one is caused through negligence, while the other may be caused through one of those tricks of the mind of which we are all occasionally victims. It behooves the internist, therefore, to give to each individual patient, who applies to him, a most searching examination, regardless of the character of the ailment for which he applies. In order to do this, it will be necessary for him to content himself with a very limited num-

ber of patients and to measure his success rather by the quality of work done than by the quantity. That internist or general practitioner who boasts of seeing in his private practice from forty to seventy patients a day is a menace to the community in which he lives. Though his mistakes and oversights may never be revealed to him, they are numbered by the hundreds. Progress, then, in internal medicine, means something more than mental progress; it means something more than the perfecting of diagnostic procedures and therapeutic methods; it means moral progress, a desire to give to every patient an opportunity to use an ounce of prevention instead of a pound of cure. It is in this way, and only in this way, that preventive medicine may yield its best results. It is a mistake to believe that preventive medicine may be applied only in diseases of bacteritic origin. Preventive medicine may be employed by the internist through the recognition of the incipient stages of all diseases. When a patient applies to a physician because of a certain disturbance, that physician's examination should not end with the examination of that portion of body to which the patient refers his symptoms, otherwise he may be overlooking diseases of the kidney, beginning consumption, or beginning tabes, etc. We believe that much of the progress that has been made in internal medicine during this year, during the past few years, rests in the awakening of the physician to his absolute duties to his patients, as well as to the science of medicine.

While this paper is supposed to be devoted to internal medicine, it is almost impossible nowadays to separate medicine and surgery. The border-line diseases are multiplying yearly; diseases which a few years ago we felt could never be included in the domain of surgery, are now recognized as surgical in those cases in which a rational internal therapy has been persistently employed and has failed to accomplish results. Among these must be included not only diseases of the stomach, the gall-bladder, kidneys, etc., but even chronic and inflammatory processes and ulcerations of the large intestine, etc. There is no knowledge more important to the internist than a knowledge of surgical indications, for after all it is for the internist to decide when a case ceases to be medical and when it becomes surgical. This knowledge can be obtained only through the close association of physicians and surgeons. There is no better way of obtaining this knowledge, especially with reference to abdominal diseases, than through regular attendance in the operating room and viewing the conditions in the abdomen that have been diagnosed through subjective and objective signs. The time has passed when the internist can speak of the surgeons transgressing upon his field, and when the surgeon can feel that there is no place for the internist. There must be a unison of action between the internist and the surgeon if the best results are to be attained in both medicine and surgery.

In this connection we cannot omit mentioning a most interesting dis-

cussion on the diagnosis and surgical indications of non-malignant diseases of the stomach at the meeting of the British Medical Association during the latter part of last year. The discussion was engaged in by such men as Moynihan, Saunbey, Hartman, Finney, Clark and Moullin. We shall not enter into a consideration of the various points brought out in the discussion, but can highly recommend a perusal of the transactions to those interested in the subject.

Janeway discusses that debatable ground known as the border-line of medicine and surgery. Though asepsis enables the surgeon to do successfully much that could not be undertaken in previous years, he warns against the dangers of unfulfilled predictions and too great optimism. He points out, too, the dangers of bringing surgery into disrepute through taking surgical chance in hopeless diseases, and charging a large fee for so doing. In dealing with border-line cases, it is advisable to obtain as nearly as possible an accurate diagnosis before resorting to surgery; all available means should be employed in order to form a correct diagnosis. If this is not done, unnecessary operations may be performed, or having been begun may have to be repeated in another direction. In support of this statement he mentions, as examples, renal calculus and appendectomy, gall-bladder disease and appendicitis, etc.

The author discusses many questions of interest to both the surgeon and the internist in their relationship to one another. The internist, in many cases, must decide promptly and definitely as to the indications. As an example, he mentions the danger of hemorrhage in cases of protracted jaundice, and points out the importance of deciding early in regard to the probable need of surgical intervention. Operations upon the kidney for decapsulation have shown that the presence of albumen and casts is not a contra-indication to anesthetics and surgical intervention. The physician has not infrequently to consider carefully whether the degree of anemia present is such that he must advise against surgical interference until an attempt has been made to bring about a better blood state. The author questions the advisability of urging patients to dubious palliation, such as artificial anus in an inoperable cancer of the rectum not markedly obstructive. Taken as a whole, the paper simply tends to show the great importance, both to the patient and to the science of medicine, of the internist and the surgeon working together in harmony.

The Mayos make the statement that there is no truthfully recorded case of a cancer of the stomach cured by medical means, but that these cases are nevertheless treated by medical men and necessarily result in 100 per cent mortality. Cancer of the stomach is the most frequent form found in the human body, at least thirty per cent of the total, a tremendous sacrifice of human life almost without an effort at cure. They blame this state of affairs upon the past high mortality of radical excision and the difficulty of early diagnosis. They maintain, however, that the im-

proved technique of the past few years has lowered this mortality to less than 10 per cent. They report eighty-one gastric resections with a mortality of 14.5 per cent. Thirty-four of these were operated upon within the last thirty months with a mortality of eight per cent. Of the total number, five failed to live six months after operation, thirty-eight cases lived six months to a year, twenty-one from one to two years, ten from two to three years, four from three to four years, and one is alive and well after four years and ten months. They consider the clinical history and symptoms of the greatest value in early diagnosis. At best, however, all known means of diagnosis merely give rise to a suspicion, and if we cannot disprove it, exploratory operation is called for.

Deaver, in the discussion of this paper, urges upon the internist the importance of familiarizing himself with the pathology of the living being in the operating room. He, too, lays great stress upon laboratory methods, for, as he says, hydrochloric acid may be present in cancer of the stomach and lactic acid present in diseases other than cancer. In a choice between symptoms and physical signs he relies more upon the former than upon the results of the physical examination. There have been so many cases in which a palpable tumor disappeared, after stomach rest had been obtained by gastroenterostomy, that he has found it well-nigh impossible to diagnose unerringly a tumor as malignant until either the constitutional symptoms were well advanced or the abdomen was opened. The character of the vomitus and progressive emaciation are to be most relied upon when the case is at all advanced. Emaciation, however, is not to be accepted merely on the patient's word. The statistics from the clinics of Kroenlein and Mikulicz show that patients who have undergone an exploratory laparotomy in which no further operative treatment was possible, actually lived longer than did those whose disease was so far advanced as to make even an exploration unjustifiable. For this and other reasons, Deaver is a firm believer in exploratory laparotomies where justifiable indications are present. He believes that there is too much surgery being done upon the stomach at present. He considers indigestion as belonging first to the internist, and if through rational treatment persistent symptoms are not relieved, surgical investigation to discover and relieve the physical conditions is not only justifiable, but indicated. He believes that every case of gastric indigestion not cured by rational treatment will be found to be due to lesions of the gall-bladder, duodenum, pancreas or the stomach itself.

In an exhaustive article, Goldschmuecker reviews, in detail, the results of surgery in perforation in ulcer of the stomach, presenting about 300 literature references leading up to the present date. Inasmuch as this subject is one of special importance to the internist, we deem it well to call attention to it here. It would be utterly impossible to call attention to all the points brought forth in this exhaustive article, but allusion may

be made to a few of the conclusions reached, especially in reference to diagnosis. Perforation of ulcer of the stomach occurs more often among women than men, and the women thus affected are younger than the men. The previous history is exceedingly important in arriving at a diagnosis, because, in most cases, the history of a long-standing affection of the stomach may be elicited. For sudden perforation there is no absolutely certain sign; however, sudden, severe pain localized in the gastric region should always direct one's attention to the possibility of the existence of this condition. Localized peritoneal friction sounds in the gastric region are always important. Early vomiting occurs in the majority of cases; the abdominal walls are exceedingly hard; the disappearance of the liver dulness has only slight value, as a thorough diagnostic sign of gastric perforation it is greatly overestimated. If possible, cases should be operated upon within the first twelve hours, since the chances for recovery after this are greatly diminished. The results of operation within the last few years have been materially better. Of course, where possible, the patient should be operated upon in the hospital rather than at home. About 50 per cent of the cases are cured through operation.

In reviewing a large statistic of intestinal carcinoma, Boas comes to the conclusion that the chances for early diagnosis are very poor, indeed, because of their latent development. Eighty per cent of all rectal carcinomata which are within view and may even be palpated, come to the surgeon too late for operation. This being the case, carcinoma of other portions of the intestines, offer even poorer chances. In review of 25 cases of cancer of the small intestine, Kanzler also considers the clinical diagnosis impossible in 50 per cent of them. The early diagnosis, which of course, is all the more difficult, seems well nigh impossible in a large percentage of cases. These cases frequently occur before the thirtieth year, seldom produce bleeding and the clinical manifestations may be present for one to ten years.

In chronic diarrhea not responding to other methods, Gant has performed appendicostomy. He recognizes the fact that the original cause of chronic diarrhea is most often above the ileo-cecal valve, but also believes that "the lesions in the colon, sigmoid and rectum thus produced not infrequently remain as an independent and continuing cause of the diarrhea long after the original ailment * * * is relieved or cured." He reports nine operative cases, seven of which resulted in cure after other methods had failed. One case was unsuccessful because of a stricture of the transverse colon. One case died as a result of gangrene of the appendix and cecum, showing that the operation is not without its own dangers. Irrigations of saline solution, ice water, nitrate of silver, etc., were used. Three resistant cases of amebic dysentery were especially successful under this treatment.

Bennett recommends appendicostomy in the treatment of dysentery as well as some other intestinal disturbances. Ewart also recommends it in certain diseases of the caecum, ilium and colon. He has succeeded in curing cases of mucous colitis in this manner, that have withstood all medical treatment. One of the exponents of this procedure is Tuttle, who reviews the literature on appendicostomy and recites the results in 77 cases performed in various conditions. Most of these are conditions usually considered medical in character. Operations were performed in 44 cases, following which there were six deaths and thirty-eight recoveries. The deaths were due to complications and not to the operation alone. Operations were also performed for mucous colitis, tubercular ulcer of the colon, chronic constipation, etc. We firmly believe that there are many cases of dysentery and ulceration of the colon, in which surgical interference of such a simple and safe nature might be thoroughly justified. In this, however, as in all other border line diseases, the internists recommend and will be upheld by all right-thinking surgeons, that even this operation should not be done until all possible medical means have been exhausted.

Among those diseases which are on the border-line between medicine and surgery, gall stones may be considered one of, if not the most important. It is maintained by many surgeons and few internists that gall stones should always be operated when the diagnosis has been fixed. Rosenheim believes that a rational therapie should be first carried out and an effort made to cure the patient through medical means. If these fail and recurrences occur, then surgery should be resorted to. While this is the view held by most of the internists, there is still much doubt as to whether or not delay could be brooked when one feels reasonably sure of the presence of gall stones. One never knows when complications may occur and when carcinoma may develop as a result of constant mechanical irritation. The percentage of cases, of course, in which these complications do occur is few; however, there is a question as to whether the dangers of delay are not greater than the dangers from surgical interference carried out by modern experts. Based upon observations of others as well as upon his own experience in the treatment of gall stones, the v. Aldor discusses the medical treatment of gall stones and recommends the greatest care in the selection of the surgical cases. According to Riedel's figures two million people in Germany have gall stones, but of this number only one hundred thousand have "gall stone disease," that is, have clinical manifestations. He calls attention to the fact, too, that in autopsies many cases of gall stones are discovered in which there has been no evidence of their existence during life, and in which the mucous membrane shows no pathological changes. The author has frequently seen cases in which gall stones unquestionably existed, enter into a latent stage without the gall stones ever having been passed. On the other

hand he has seen cases, in which a large number of gall stones have been passed, persist in spite of the fact. Korte states that he has operated upon cases with typical symptoms of cholelithiasis and found an infectious cholecystitis with no gall stones present. In seventy-six operations he has made careful bacteriological examination with positive results in all.

These facts, together with many interesting observations of the author himself, lead him to believe that surgical interference is justified in a very small percentage of cases. The early operation in cholelithiasis is seldom if ever indicated because gall stones is a benign disease in which there is a tendency to absolute cure. The treatment will depend, of course, upon the individual case. The author, however, leans naturally to the Carlsbad treatment.

Even enteroptosis in all of its phases are being operated upon by surgeons, who claim excellent results. We fear, however, that in these cases the same good results cannot be expected as are obtained in other border-line conditions. By enteroptosis one usually understands splanchnoptosis, in which all of the abdominal viscera have a tendency to drag downward. There are probably no well authenticated cases of enteroptosis in the true sense of the word; i. e., in which only the intestines are involved. An operation, therefore, for splanchnoptosis, if it is to be complete, would necessitate a "pexy" of the kidneys, the liver, the stomach, and even the intestines. This, of course, would prove practically impossible. However, it is often possible to replace those organs which are producing the chief symptoms, namely, the kidneys. Operations are being done and good results are being claimed by the surgeons in hepatopepy, gastropexy, etc. We fear that the surgeons too often look upon the exit of the patient from the hospital as a cure and don't follow their cases long enough. Many and many of the cases being reported far and wide by the surgeons as recoveries from this and that condition are still being treated by the internists for the same old symptoms.

Rovsing, of Copenhagen, reports, for instance, his results in 100 cases of nephropexy, 18 of hepatopepy, and 54 of gastropexy. He states that the results from these operating measures have been most excellent. While he recommends the use of the abdominal supporter in cases of relaxed abdomen, he believes that no benefit can accrue from them in those cases of enteroptosis which can only be attributed to an hereditary tendency. While his arguments are in a measure rational, it must not be forgotten that simply by stitching the stomach or kidneys back in position he does not in any sense relieve the patient of this "tendency." These in our opinion, are just the cases from which little or nothing may be expected surgically.

Eve has also performed a number of operations for gastropotosis, in which he attached the lesser curvature of the stomach to the liver, and

where the liver was displaced it was placed in position and attached to the anterior abdominal wall. The probabilities are that the autopsy in this case will show both the liver and the stomach to be just where they were previous to operation.

Ulcer of the stomach has received, during the past year, its usual amount of consideration. The fact that ulcer of the stomach and duodenum may so closely resemble in their symptomatology, the ordinary forms of nervous dyspepsia, and cholelithiasis, the efforts of those who are interested in gastrointestinal diseases are being concentrated toward finding a symptom, that will in a way be pathognomonic. Heretofore, the cardinal symptoms of ulcer of the stomach have been hyperchlorhydria, vomiting, gastralgia, and the vomiting of blood. The work of Boas on occult hemorrhage has opened a new field in the diagnosis of ulcer of the stomach, and one which is deserving of all the attention that it has received during the past year. There is little doubt in the mind of those conversant with the subject, that traces of blood in the feces and stomach contents in the absence of other causes, point to the probability of ulcer or carcinoma of the stomach and intestines. The one point toward which all are striving now is a reliable and simple method of determining the presence of blood pigment in the feces. It is absolutely necessary of course, before too great stress is laid upon the finding of blood, to eliminate the other possible causes of blood in the gastrointestinal tract. Indeed, it has been shown that even slight bleeding from the gums, in cases of pyorrhea alveolaris, may show the presence of blood pigment in the feces. Therefore, these factors must be entirely eliminated, even in the presence of symptoms that may be interpreted as those of ulcer of the stomach before one should be willing to say absolutely that the blood, present in the feces, is due to this cause. It was shown by Boas, too, that the ingestion of poorly cooked meat may also reveal the presence of blood pigments in the feces and that the patient should be put on a diet free from meat for several days before the examinations of the feces are begun. This, of course, is best accomplished in a hospital, where the patient's diet may be completely controlled. The tests that are most relied upon and which have been most efficacious are the guaiac-turpentine, aloin, benzadin and the spectroscopic tests. Mathieu and Roux in their observations upon the examinations of the feces for occult bleeding came to the conclusion that the test in normal conditions is negative. In acute ulcer it is almost constant, and in chronic ulcer frequently present. If the occult bleeding continues in spite of treatment, one must think of carcinomatous degeneration. In carcinoma, traces of blood are almost constantly present. In fourteen cases they found blood positive 13 times. In carcinoma of the colon, blood is less frequent. It is very often positive in other forms of intestinal ulcerations and cirrhosis of the liver. Ewald lays great stress upon the examination of the feces for

occult hemorrhage, and recites his experiences which are altogether favorable. Carlson recommends the use of hydrogen dioxide as an oxidizing agent, because in his opinion a reaction is more definite. He enters into the chemistry of the subject. Friedenwald and Rosenthal published a series of results obtained from the examination of the feces for occult hemorrhages in stomach affections generally. They never found blood in any of their cases of chronic gastritis, atony of the stomach, hyperchlorhydria, hypersecretion, acute gastritis, nervous dyspepsia, etc., but did find it in 74 per cent of all examination of ulcer cases. They found it also in 82 per cent of their cases of cancer of the stomach. Falloise regards the presence or absence of "gastrorrhagies trustes" as a most valuable differential sign in ulcer, chronic gastritis, achylia, carcinoma, etc. Benedict also recites most satisfactory results, employing a modification of the Boas test. Jaworski and Korolewicz made a series of very interesting observations with reference to the presence and absence of blood in the feces in various conditions which may simulate ulcer of the stomach and duodenum. They employed Weber's modification of the guaiac-turpentine test and find it very reliable. The tests were also made with reference to the negative and positive actions produced through the different foods and drugs. It was found that no reaction was produced by human bile, raw or cooked egg albumin, raw and cooked yolk, sweet milk, cream, tea with sugar, black coffee, cocoa, beef broths, cheese, butter, bacon, turnips, apples, plums, cooked spinach, breads, the green vegetables, etc., etc. The reaction was positive, however, when the patient had taken various kinds of roast meats, chicken, calf meat, ham, smoked meats, calves brain, and among the drugs, iron chloride, iron sulphate, Bland's pills, etc., etc. These observations show the importance of placing a patient on a restricted diet before drawing definite conclusions. Boas reviews in this excellent article the methods of examining the feces for occult hemorrhage, and recommends most heartily Weber's modification of the guaiac-turpentine test. The modification by Weber consists in the conversion of the haematin into an acid combination that is readily soluble in either. The pigment is then extracted by ether and the test with guaiac-turpentine is then applied. He shows the great importance of this test in the differentiation of such conditions as ulcer of the stomach, benign pyloric stenosis, and pyloro-spasm. He points out also its importance in the diagnosis of carcinoma of the stomach and tuberculous ulcer of the intestines. He lays stress upon the fact that too much significance must not be placed in the negative reaction where carcinoma is suspected, for it is possible in carcinoma to have no blood present.

Hemmeter recommends a new and unique method, which if practical, will prove a most valuable addition to our methods of diagnosing ulcer of the stomach. It has been shown experimentally that if one takes subnitrate of bismuth in suspension and moves about so as to distribute

the bismuth over the walls of the stomach, the stomach may be outlined for from three to six hours with the X-Ray. In other words, the subnitrate of bismuth will cling to the walls of the normal stomach for about that period of time. Hemmeter claims to have shown, however, that if this same method be applied to patients with ulcer of the stomach, a larger amount of subnitrate of bismuth clings to that part of the wall of the stomach, filling up, as it were, the ulceration and adhering there for a longer period of time. He claims to have been able to demonstrate the bismuth at the point of ulceration from 24 to 36 hours later. The patient, after the first suspension of a heaping teaspoonful of bismuth is taken, is instructed to lie upon his back, and a few hours later the fluoroscope is used. If no dark shadow is found the same procedure is repeated a day or two later, having the patient lie upon his abdomen. In this way he maintains that the ulcer can ultimately be located. As yet, the method has received but little attention, and until further reports appear, little can be said of its practicability. Turck has shown experimentally that ulcer of the stomach and duodenum can be produced in dogs by feeding them bacterium coli communis for a long period of time, and thinks that he has at last solved the problem underlying the etiology of ulcer of the stomach. Zironi in his experiments upon rabbits succeeded in producing ulcer of the stomach at intervals varying from 11 to 60 days in six out of fourteen rabbits. His method consists in resecting the vagus below the diaphragm.

The medical treatment of ulcer is a subject that should always elicit the interest of those who are desirous of giving their patients the benefit of every possible chance before resorting to the knife. Haberman reviews of the work of Lenhartz at the Eppendorf Hospital in Germany and reports most excellent results. The method followed is about as follows:

Absolute rest in bed for at least four weeks. An ice bag is applied almost continually to the gastric region. The ice bag is preferred, because it prevents gas expansion and limits pain and peristalsis as well as hemorrhage. On the first day the patient gets from 200 to 300 cm. of milk in the course of 24 hours, a tablespoonful at a time, and from two to four raw eggs. Two to three times a day two grams of sub-nitrate of bismuth are given; the milk is increased at the rate of 100 cm. a day and one egg, so that at the end of the first week 800 cm. of milk and 6 to 8 eggs are being given. In the third week, rice and oatmeal and zwieback are given. The constipation in the first week receives no treatment. During the second week the patient received injections of glycerin or warm water. Bland's pills are given throughout. At the end of the fourth week the patient is permitted to get out of bed and to leave the hospital from the sixth to the tenth week. Following this treatment hemorrhage has occurred in but 8 per cent of the cases, as compared with 20 per cent by other methods. The hemoglobin increases from 6 to 7 per cent a

week, and the weight about 2 pounds. Senator reviews the recommendations of Lenhartz, viz: that ulcer cases, even immediately after a hemorrhage, should have a strong albumen solution in order to replace as quickly as possible the blood and strength that has been lost. This was recommended in the place of exclusive rectal feeding, which had been the generally accepted treatment in cases with hemorrhage. Along the same lines the author recommends the employment of gluten, fat and sugar together with small amounts of albumen. The advantages claimed for these articles of diet are, that being concentrated forms, they do not act as a weight in the stomach, nor distend the organ; they have a sedative action and do not produce hemorrhage; they counteract the surplus amount of acid present, and are easily digested and highly nutritious. Immediately after the hemorrhage he gives, every half hour, a tablespoonful of gelatin solution (20 to 200), and follows this with small quantities of cream and butter, so that in 24 hours the patient has received 30 grammes of butter and 250 cc. of cream (900 to 1,000 calories). After several days the patient is given milk and eggs, and later still scraped beef. The gelatin decoction is discontinued as soon as the hemorrhage ceases so that it may be resorted to again in case of fresh hemorrhage.

Eicheler conducted a series of observations on some thirty patients with a view to testing the value of Sahli's desmoid reaction. This reaction is based on the fact that raw connective tissue fibres are digested in the stomach alone and only when the secretions of pepsin and hydrochloric acid are relatively normal. Sahli recommended the ingestion of small rubber bags containing methylene blue, tied shut with raw catgut. As soon as the catgut is digested the methylene blue or iodoform is liberated and soon makes its appearance in the urine. It should appear within twelve to eighteen hours. If the secretions are not up to normal, then the catgut is either not digested at all and the little bags are expelled with the feces, or is digested very slowly and the methylene blue makes its appearance in the urine at a much later period. Eicheler found in his series of investigations that the Sahli method is very reliable and corroborated his findings by a comparison with the chemical findings in the stomach contents. Kuehn conducted a similar series of observations on some fifty-four cases and corroborated in every way the claims of Sahli. He praises the method very highly and believes that in a large degree it can supplant the use of the stomach tube. Horwitz tested the desmoid reaction in a series of 44 cases, of various affections, in which first the gastric contents were examined. Their results were highly satisfactory and corroborative of Sahli's results. In cases in which the tube is contraindicated, they consider this test an admirable one. Aldor considers the desmoid reaction of little or no value, while Alexander and Schlesinger report a similar outcome of their investigations. Einhorn maintains that catgut will also be digested by intestinal juices. Therefore, it is not re-

liable in testing gastric functions. Hirschler attributes little value to it, maintaining that the Ewald and Boas methods are still the best. Kaliski considers the test a most excellent one, and believes that one may even form some idea as to the degree of acidity in the stomach. The deep blue color of the urine, occurring within from 4 to 7 hours, speaks for hyperacidity; while its occurrence in from 7 to 12 hours, for normal acidity. Roux and Riva consider the catgut indicative of gastric digestion, because of their observations in a case of duodenal fistula. They introduced pieces of catgut into the fistula and found them in the feces undigested.

The test diet recommended by Schmidt and Strassberger in studying the intestinal functions, have received the widest recognition. They have perhaps done more in the past year or two toward showing the great importance of careful macroscopical, microscopical and chemical examination of the feces, than any other authorities on their subject. Their test diet consists of about the following: 0.5 liters of milk and 50 gm. zweiback early in the morning; for breakfast, 40 gm. oatmeal or 0.5 liters of oatmeal gruel, 10 gm. butter, 200 gm. milk, 300 gm. water and one egg (strained) for dinner, 125 gm. chopped beef (weighed raw), browned over but still raw inside, and 250 gm. mashed potatoes (made with 190 gm. potatoes, 100 gm. milk and 10 gm. butter). The afternoon meal is like the earlier meal, and the supper like the breakfast. A tablet of 0.3 gm. of pulverized carmin is given usually at the commencement and conclusion of the test diet, which is kept up for three days or longer. The appearance of the carmin which passes through unchanged, indicates the beginning of the excreta coming from the test meal. Portions of this is then examined carefully, macroscopically for evidence of parasites, foreign bodies, remnants of connective tissues, etc. Microscopic examination for all the morphotic elements in the feces, the chemical tests for bilirubin, hydro-bilirubin, blood pigment, etc.

Einhorn conceived the plan of attaching solid foodstuffs to porcelain beads and then to have them pass through the stomach and bowel in order to see what remained attached to the tube. It is self-evident that a substance which is entirely digestible will disappear, whereas indigestible substances will be found in the feces attached to the beads. Through this means he was able to determine how the various foodstuffs behaved in the stomach and bowel of apparently healthy persons. To test the work of the stomach alone, the beads, with the food substances attached, were tied to a silk thread 50 cm. long; the beads were swallowed and exposed to the action of the gastric juice four to six hours and then withdrawn. Attached to the beads were catgut and meat, raw tendon, raw chicken skin, raw potato, etc. These experiments in healthy people show that both catgut and fish bones are digested in the stomach, whereas boiled or raw meat, raw chicken skin, and raw as well as boiled potatoes do

not disappear in the intestines. Tendon, however, remains undigested. Raw potatoes sometimes disappear entirely, sometimes pass through the intestines unchanged. He also carried out a series of experiments testing the gastric functions according to the methods described by Ogata, Schmidt and Sahli.

The test recommended by Salomon for carcinoma of the stomach has been widely discussed and many observations published pro and con. The test recommended by him is as follows: (1) Patient received fluids, 8 a. m., and fluids and food free from albumin at 2 p. m. (2) Stomach is washed clean, 9 p. m. (3) Abstinence from everything during night. (4) Stomach lavage twice with 400 cc. physiological salt solution next morning. (5) This solution is tested with Esbach's and Kjeldahl's method for total solids. Salomon's conclusions are as follows: (1) In all cases of carcinoma of the stomach Esbach's reagent produced a flocculent precipitate and Kjeldahl's method showed more than 25 mg. total solids per 100 cc. (2) The majority of the other stomach affections (nervous dyspepsia, chronic gastritis, gastropotosis) produced only at most a slight cloudy precipitate with Esbach's and 16 mg. Kjeldahl. (3) These findings (as in 2) were also present in chronic ulcers. Fresh painful ulcers were not examined. (4) When no flocculent precipitate was present with Esbach's, ulcerative processes in the stomach were thought improbable. Reicher gives the results of Siegel, Berent, Gutmann and Richtenstein, all of which have shown more or less uncertainty of this method. Reicher shows that this reaction can take place in the presence of serum albumen, serum globulin, albumoses, peptones, nucleo-proteids, purinbases, mucin and mucin-like bodies as all these are precipitated by Esbach's reagent.

Though the internist may not have frequent occasion to use either the esophagoscope or the bronchoscope, for those conditions are rare in which they are indicated, it is nevertheless, necessary that much stress should be laid upon their application. The magnificent work of Killian of Freiburg, von Schroeder of Vienna, and others are worthy of the greatest recognition. Killian especially reports the diagnosis and removal of foreign bodies in the bronchi, the diagnosis and dilatation of stricture of the bronchi, the diagnosis of the presence of growths in the bronchi and trachea, etc., etc. Diagnoses of this sort could not possibly be made without such an instrument as the bronchoscope, and if it were possible to correct the conditions thus diagnosed, it would require the most skillful surgical procedures. The bronchoscope, a straight tube, varying from 20 to 30 cm. in length is introduced directly down through the larynx and trachea into the right or left bronchus with comparative ease. And through the use of forceps, curettes, etc., foreign bodies, small tumefactions and strictures have been eliminated. Until the last year, this work was in the hands of a few, but during the past twelve months it has been receiving attention from various sources. The esophagoscope, while

it may be introduced with the same ease and with as little danger, has, perhaps, not yielded as satisfactory results, because the conditions for which it is used may be diagnosed almost as well by other methods, and, as a rule the indication for its use are not as urgent. The patient, of course, is put to considerable discomfort, and as a rule, will not yield to the application of these instruments unless it is absolutely necessary. The experience of some is that the instrument cannot always be successfully introduced the first time, and that the patient will not often permit its use the second. However, they are diagnostic instruments of precision, which should be resorted to whenever the diagnosis cannot be made by other means. One who has viewed the work of Killian and his assistants will certainly have no hesitancy in using or recommending the use of the bronchoscope and esophagoscope, if the diagnosis cannot be made otherwise. Yankauer reports the removal of a foreign body from the bronchus of a child 10 months old through the bronschopi. A piece of orange was aspirated into the right bronchus. Because of the age of the child it was necessary first to perform a tracheotomy and then to introduce the bronchoscope. From a large number of cases upon which von Schroeder has used the bronchoscope for diagnosis of diseases of the mediastinum and lungs, he reports three cases, two of which were primary carcinomata of the lung. These cases were diagnosticated by means of direct inspection of the lesion through the bronchoscope and he says he believes that by the use of the bronchoscope many malignant growths of the lungs can be diagnosticated positively, but that the diagnosis can also be made in many cases without this aid (physical findings, X-Ray, etc.). That only when the differential diagnosis as to the pathological process of the lung and mediastinum is to be established are the bronchoscopic and laryngoscopic examination of value. In primary carcinoma of the bronchi or esophagus, tumors of mediastinum and aneurism, these special means of diagnosis are of great help and may be combined with esophagoscopy. He does not consider an aneurism as a special contraindication to examination of the trachea and bronchi or esophagus, and he concludes that bronchoscopy is indicated and of value in indefinite diseases of the lungs as an aid to diagnosis.

The value of the sigmoidoscope in the diagnosis of diseases of the sigmoid is beginning at last to receive from internists its proper attention. Heretofore, the instrument has been used almost exclusively by those making a specialty of diseases of the rectum and surgeons in general. The internist, however, is getting away from the idea that he must use no instruments in his work. In fact, he is beginning to realize more and more that it is often through these instruments of precision only that he is able to make definite diagnoses. The conditions, in which the internist has an opportunity to employ the most reliable sense, namely, the sense of sight, are few, and it is well indeed that he should permit no

such opportunities to escape him. It is very often necessary in order to locate diseases of the large intestine to exclude the sigmoid as a possible location of the trouble, or, through the use of the sigmoidoscope to be able to locate the trouble there. There are unquestionably many cases treated as colitis, when in reality the trouble is localized in the sigmoid and rectum. Through the proper manipulation of this instrument, known by some as the recto-romanoscope, it may be introduced from 25 to 35 cm. without causing any great distress to the patient, and the entire rectum and lower portion of the sigmoid may be viewed in their entirety. Schreiber, H. Strauss and others have pointed out the importance of introducing either the proctoscope or the sigmoidoscope under the continuous aid of the eye. The instrument should be introduced, according to them, not more than two or three inches, with the obturator in position, the obturator should then be removed, and under direct or reflected light, the instrument carefully introduced its full length. In this manner there is no danger, whatever, of the perforation of the rectum or sigmoid, such as have occurred in the hands of those who endeavor to introduce the instrument blindly. St. Kelen recommends the use of Strauss's rectoscope; with a light at the distal end, and describes the technique for using the instrument with absolute freedom from danger. The methods described by him is practically the same as that mentioned above. Mummery points out the dangers of basing diagnoses of colitis upon symptoms alone. Every case should be carefully examined with the sigmoidoscope. In this manner, cases supposed to be colitis are often found to be benign or malignant tumors or ulcerations.

The work on opsonins and vaccine has been attracting much attention from clinical sources, and promises to be of great clinical significance in the future. Wright, of London, has perhaps presented our most practical knowledge on the subject, and has perhaps done more than anyone toward making the opsonic theory popular. Metchnikoff, many years ago, recognized the role of the phagocytes in the resistance of the body against disease. To Denys and Leclef, however, belong the credit of showing that to the liquid portion of the blood belongs a power of causing white blood corpuscles to ingest bacteria. It was afterwards shown that the serum from guinea pigs inoculated with the pneumococcic toxins produced a more active phagocytosis than did the normal serum. Following this came methods by which the amount of phagocytosis could be estimated. Wright, aided by the work of Leishman and Neufeld and Ripman, perfected a method of determining the phagocytic property of serum and found that the sera of all apparently healthy individuals contained practically equal amounts of these bacteria-affecting substances, which he called opsonins. The term is based upon the word opsono, meaning, I prepare for food. He found that the serum of persons known to be suffering from a certain disease was found to contain greater quantities of opsonins than

that of normal individuals. He has applied the knowledge of this fact to practice and through the aid of it claims to have been able to make early diagnoses, as in tuberculosis, when other methods had failed to reveal it. He found also that even though the opsonins were found normal, and infection was known to exist, that the opsonins were not so readily destroyed by heat as are the normal. He applies this fact also in diagnosis. Wright and Douglas have also found that the quantity of opsonins can be altered by standardized cultures of bacteria, which they called vaccines. When the vaccines are administered there occurs ultimately a rise in the amount of opsonins. In this way it is possible to raise the opsonins above that of normal sera. The dose of vaccines is regulated according to the opsonic index, which is the relation of the quantity of opsonins in the blood of one individual to that of a normal individual. If the theories of Wright be confirmed by the careful and prolonged observations of others, the amount of practical good that may come of it is unlimited both as to diagnosis and to the prevention of disease.

Mention must be made, in this connection, of the advancement in the treatment of tropical diseases. For some years the Germans, Italians and Englishmen have given a great deal of attention to this subject, because of their possessions in the tropics. It is during only the past two or three years, however, that the Americans have had any great incentive to study these conditions. Without entering into a discussion of the advance in the knowledge of conditions peculiar to the tropics, we would simply mention the work on bubonic plague, dengue, yellow fever, Malta fever, malaria, beri-beri, and uncinariasis. Our interest in this work originally brought about by our possessions in the Philippines will receive a new incentive through our occupation of the canal zone. There is no question but that one of the greatest problems to be solved there is the prevention of diseases peculiar to that country among the workmen employed. President Roosevelt has recognized that, without the proper state of sanitation, the canal cannot possibly be completed, and it is gratifying to note that Dr. Gorgas will probably receive an appointment on the canal commission. He has already done admirable work, and already yellow fever has been practically eliminated from the zone. Gorgas calls attention to the great mortality on the Isthmus of Panama during the French occupation, and compares these figures with the ones that have been attained during American occupation of the canal zone. The result of his work has been the practical elimination of yellow fever from the zone. In June they had sixty-seven cases, in July forty cases, in August twenty-seven cases, in September seven cases, in October three cases, and none in November and December. Of course, it is too early to say that yellow fever has been entirely eradicated from the Isthmus. This cannot be confirmed with any certainty until the full life of the female *stegomyia* has been passed. He has seen them live in captivity for

150 days and believes, therefore, that several months will be necessary to determine whether or not yellow fever has been entirely eliminated from the Isthmus.

Graupner, following a series of observations and experiments, believes that the functional tests of the heart must take into consideration the blood pressure, the volume of the heart beat, the degree of tension in the vessels as well as the mechanical pressure, which stretches the walls of the vessels. He lays great stress upon the blood pressure as an index of the functional capacity of the heart. In order to demonstrate that changes in the blood pressure are an indication of the sufficiency of the myocardium, he recorded the blood pressure every half minute in individuals using a certain group of muscles. He devised an instrument which he calls the ergometer, for this purpose. In health there is very little variation in the blood pressure during exercise. Great variations of the blood during exercise, he considers an index of the functional capacity of myocardium. He believes that in even valvular lesions, it is possible, in this manner, to determine whether the myocardium is also involved.

Rosengast reports five cases of arteriosclerosis of the gastrointestinal tract, and reviews the atypical findings of more or less localized arteriosclerosis. He says that a tortuous temporal artery, a normal pulse, normal blood pressure, normal urine, etc., are not positive criterion for normal arteries generally. Also, that these findings may be accompanied by stenocardia without stenosis of the coronary arteries. The symptoms from the gastrointestinal tract in generalized arteriosclerosis are frequently due to primary arterial changes of that system, instead of secondary conditions (passive congestion, reflex from heart, etc.). Some of the symptoms of this primary condition are rumbling and painful distention of the abdomen, especially in the right hypochondrium; intermittent colic and regurgitation of gas, which gives a temporary relief; occasional hemorrhage; sometimes the passage of flatus with or without feces; irritability; restless sleep, the patient being disturbed frequently early in the morning by distension and pain in the stomach, which is sometimes relieved by sitting up and taking food; appetite good; bowels somewhat constipated. Physical findings are meager. Digestion normal. HCl. sometimes increased; pulse rate usually gradually increased; heart dullness enlarged, soft systolic sound and accentuated second aortic sound; and increased blood pressure. Alcoholics with eczema ani and hemorrhoids have frequently been observed to have this condition. The condition had remained undiagnosed for years until an attack of stenocardia has directed the attention to the cardio-vascular system. Men with strenuous occupations seem predisposed. As to the differential diagnosis, many abdominal conditions must be differentiated according to the distension and localization of this condition, as follows: Gall-stones, appen-

dititis, foreign bodies in the ureter, intussusception, intestinal obstruction, ulceration, etc.

He illustrated the difficulty of diagnosis by three cases which were operated upon under mistaken diagnosis.

Schmidt discusses the relationship between gastrointestinal and heart diseases, and shows how affections of the one may often be taken for those of the other. It is quite natural that gastrointestinal disturbances should arise in diseases of the heart because of the stagnation in the portal system. Much of the gas produced in the intestines and introduced into the intestines with food, is absorbed and taken up into the circulation. In the event of a venous hyperemia, therefore, the absorption of gases does not go on properly, and marked distension with all of its unpleasant features occur. Frequently, therefore, gastrointestinal symptoms and cardiac disturbances are more prominent than are the primary cardiac symptoms. On the other hand, cardiac symptoms are often produced through the disturbances of the gastrointestinal tract. These symptoms may be divided into three classes: (1) Tachycardia and allorhythmia. (2) Angina pectoris. (3) So-called asthma dyspepticum. The first class of cases occurs after mistakes in the diet in persons who have chronic dyspeptic troubles and manifest themselves with rapid, arrhythmic pulse and palpitation of the heart. The second class of cases occur periodically, usually after the ingestion of food, but often upon an empty stomach, and are characterized by a feeling of pressure, anxiety, paleness, small, frequent, irregular pulse, palpitation of the heart, dyspnoea and other peculiar sensations. The digestive symptoms may remain entirely in the background.

The third group is characterized by dyspnoea of a subjective type. It resembles more the attacks of cardiac asthma than those of bronchial asthma. The affection is purely of reflex origin. The author closes this valuable article with a few words on the diagnosis, prognosis and therapy of these affections.

Stengel discusses arteriosclerosis as a general disease, and recognizes three stages, a preliminary one, in which the symptoms, due to the original factors, are confused with those of the arterial disease. Secondly, a middle period, in which the arterial disease is recognized, but in which the secondary organic changes are very important. Third, a final stage, in which circulatory and organic failures are prominent. Ophuls goes into the pathology of arteriosclerosis of the aorta in a report of seventy-five cases. Rodhe calls attention to gastrointestinal disturbances due to arteriosclerosis. He enters into the clinical symptoms of this condition, and shows the importance of a careful consideration of this as an etiological factor in abdominal disturbances. The syndrome may simulate ulcer, nervous dyspepsia, or even gall-stones, and the autopsy may show unsuspected hardening of the vessels of the stomach, or the intestinal arteries. Gastralgias due to arteriosclerosis vanish under diuretics and heart se-

datives. Erlenmeyer believes that the high arterial pressure in cases of arteriosclerosis is a self-regulating process. He thinks that when the blood pressure is low, treatment should aim to raise it. In cases where it is high, efforts should be made to lower it. Osler, in a most excellent article, reports a series of sixteen cases of aneurism of the abdominal aorta, observed at the Johns Hopkins Hospital. Fourteen of them were men and two women. The cases were characterized by paroxysmal pain in the abdomen, pulsation, etc. In the differential diagnosis he called especial attention to the importance of excluding dilatations of the right ventricle, certain hysterical symptoms in women, anemia, aortic insufficiency, and sclerosis of the aorta, in all of which abdominal pulsations are increased. Dieulafoy calls attention to angina of syphilitic origin, and recites striking examples of their cure through the use of daily injection of biniodid of mercury. Syphilitic aortitis is a subject which has not received sufficient consideration, and these cases serve to direct attention to them.

The physiology and pathology of the gastrointestinal organs is still a fertile field for investigation. Those interested in the work realize that only with the perfection of such knowledge can a rational therapy be inaugurated. Interesting observations have been made recently with reference to the secretions of the liver, pancreas, stomach and intestines. Ludwig von Aldor, reviewing previous investigations made upon the subject of fat-digestion in the stomach, the author attributes to Marcet the first positive statements in 1858. Cash corroborated Marcet's finding by experiments with the extract of the stomach mucous membranes of dogs, and said that it was of ferment nature. Klemperer and Scheurlen demonstrated this process in dilated stomach of human beings, and attributed it to a process of fermentation. Kluf and Bunge have substantiated the findings of previous authors regarding the fat-splitting function of the stomach, but the latter says it is caused by the action of bacteria. Volhard and Stade have shown that this function is not only present in the stomach, but they declare that it is due to special ferment which they have named "steapsin." They give it a definite relation to the other ferments of the stomach, and claim for it clinical importance. From von Aldor's investigation of eighteen cases he concludes: (1) That a fat-splitting process actually takes place in the stomach. After Ewald's breakfast he found fatty acid varying from 7 per cent to 10 per cent. (2) The amount of this digestion is variable and independent of the other factors of the stomach chemism. (3) That there is no satisfactory proof that it is due to a specialized ferment. Robson writes interestingly of chronic pancreatitis, and incidently recites a case which had probably had its origin in an accessory pancreas. The case was rather unusual, in that it was not accompanied by gall-stones, but began with an inflammatory process, having its origin in the duodenum. A marked degree of anemia which exists in these cases is not necessarily attributable to the cholemia, be-

cause in cases in which no cholemia exists there may, nevertheless, be a marked degree of anemia. Brugsch finds that in diseases of the pancreas there is a marked diminution of fat resorption, resulting in a loss of 50 to 60 per cent of fat, but that the fat-splitting process is not interfered with. Therefore, diminution of the fat-splitting process is not diagnostic of pancreatic disease. Hecht reports a simple method of determining a fat in the feces. The stool is first saponified with alcoholic caustic soda, hydrochloric acid is added, the alcohol evaporated, and the fatty acid extracted with ether.

Bondi and Rudinger have conducted observations regarding the metabolism of fats and carbohydrates in diabetes. The facts already established, that acetonuria in diabetes can be diminished by giving a more liberal carbohydrate diet, and that a high glycosuria may be lowered by increasing the fats, have been the basis of their experiments. They present several tables showing the influence of variations in the diet upon the sugar and acetone output, and from a comparison of these they conclude that when a certain ratio is established between the ingested fat and carbohydrates there is a considerable diminution both in the amount of acetone and of sugar in the urine, provided, however, that the case of diabetes is not of the very severe grade, and that the amount of carbohydrate given is not excessive. For explanation of these facts they incline toward the theory advanced by Gellmuden, that in the normal body the fats enter into definite chemical combination with the carbohydrates (or their derivatives), forming a third substance, which enters into the body metabolism.

Cabot points out the fallacies in the usual routine efforts to increase and decrease weight, and states that it is not as simple as the loading and unloading of a vessel. Our state of nutrition depends upon the number, the contents and the activities of our body cells.

The chief factors in nutrition are: (1) Ingestion of food, in quantity and quality suited to individual needs; (2) utilization of food, digestion, absorption, metabolism and excretion; (3) cell growth as influenced by age, sexual factors, internal secretions, sleep and other forms of rest, exercise and other forms of activity, hereditary, individual and psychic factors. He discussed each of these factors, and concludes that loss of weight is often observed as a part of the aging process in persons past middle left; that this emaciation is often associated with arteriosclerosis, possibly as a result of it, possibly as the concomitant effect of some third factor.

The rapid gain in weight often seen in growing children and in the convalescence from wasting disease is not directly a result of abundant food, and may occur even when the food supply is far below normal. The gain must be referred to an extraordinary rapid cell production, primarily to heightened growth-energy in the cells themselves. Infl-

ences connected with the organs of sex may exert a controlling force on nutrition, as is strongly suggested by the changes in flesh and figure following parturition and menopause. The importance of internal secretions in the maintenance of perversion of nutrition is exemplified in the emaciation of Graves' disease, the increased weight of the myxedematous and perhaps in the more local hypertrophies of acromegaly and Paget's disease. The possibly decisive influence of insomnia on weight is suggested by the rapid-emaciation sometimes occurring in cases of aneurism, when sleep is prevented by pain, though appetite remains excellent. Petitti, following up the work of Orlowski, who used glucose only in his experiments, endeavored to determine the degree of consumption of the various kinds of sugar uninfluenced by the liver. In order to accomplish this, the rectum was tamponed high up, and sugar solutions were introduced into the lower part of the rectum. These experiments were carried out upon diabetics as well as upon healthy individuals. The author found that sugar was absorbed as such in the rectum, without any marked degree of bacteritic decomposition taking place. It could not be said that the sugar was utilized any better per rectum than per os. At times the one was more complete, and at times the other. It is not possible to say what influences bring about the variation. In diabetics, the amount of dextrose excreted was always increased through the ingestion or injection of sugar, and this regardless of the kind of sugar used. The author is not prepared to say which sugar is best utilized by the diabetic. It seems, however, to be the milk of sugar. In severe cases of diabetes neither the existing acidosis nor the amount of sugar seemed to be in any way influenced by the introduction of sugar per os or per rectum. Sugar enemata, especially the milk sugar, have a place in the diet of the diabetic. Salus presents an exceedingly interesting article concerning diabetes and glycosuria and their relations to pregnancy, heredity, parcosis, etc. This article is accompanied by literature reference which greatly enhance its value.

The X-Ray as a diagnostic aid in internal medicine is becoming more and more popular. That it is a most valuable aid cannot longer be questioned. Stones in the kidneys, ureters and bladder are shown by the radiograph with marked precision. The work of Holzknacht on radiologic diagnosis in connection with gastrointestinal diseases is especially noteworthy. In early involvement of the lungs, too, much may be learned through the application of the rays. Schuele points out the sources of error in the ordinary methods of determining the position of the stomach, and endeavors to show that, after all, the radiograph affords us the most exact method. In carrying out these observations, the stomach was first outlined by the percussion-auscultation method; wires were fastened on the abdomen along these lines, the patient was then given a meal containing a large quantity of bismuth and a radiograph taken. In some cases the

two outlines corresponded, but in others there were great discrepancies. All in all, however, the author finds that the percussion of the full stomach in the standing position is fairly reliable. He points out the importance of using the radiograph with the patient in the standing position. In the inflation of the stomach, one of the chief sources of error is the position of the transverse colon and its relations to the stomach, sometimes lying in front of the stomach and at other times just below it. In either case, if the colon is inflated with gas, the percussion note over the stomach and colon will be identically the same.

Adam finds that in all cases in which physical examination showed difference in percussion note, or changes of breathing, etc., more or less diffuse or circumscribed shadows were demonstrated by the X-Ray. This was also present in cases in which catarrhal symptoms were found on physical examination and also in some cases in which the physical findings were negative entirely. He concludes that in those cases in which there is infiltration, the conditions were discovered earlier with the X-Ray than by means of physical examination. The second lot of cases in which there was a chronic infiltrating process without catarrhal symptoms, the diagnosis could be made earlier by X-Ray than by physical examination. Adam concedes it would take more observations to determine by X-Ray the kind of pathological process present.

Cannon finds that the most characteristic feature of the movements of the alimentary canal is undoubtedly their rhythmicity. Peristaltic waves pass in rhythmic succession over the stomach. In the small intestine the most usual activity is a rhythmic segmentation of the food. In the ascending colon, antiperistaltic waves rhythmically follow one another toward the caecum. The author has listened carefully and attentively to the abdominal sounds for long periods of time, and believes that it is possible to differentiate between the sounds produced by the stomach, small intestine and large intestine. By means of a telephone transmitter placed over the abdomen and activating through an induction coil, a nerve muscle preparation, he has secured graphic records of the sounds made by the stomach and small intestine wholly without the mediation of human judgment. The stomach-sounds are best heard about an hour after a bountiful meal, with the patient lying on his back and left side, and the stethoscope placed near the end of the eighth rib and on the right side. The sounds heard here are loud, rattling, explosive and of characteristic quality. The rate of their recurrence varies from every seventeen to twenty-four seconds. The rhythmic sounds of the small intestines are very different from those of the stomach, being soft, muffled and sometimes a group of little rattling, explosive discharges. Each sound lasts two or three seconds or more, and the rhythm is persistent for some time in one place, occurring every seven to eight seconds. The sounds of the large intestine are noticed best in the right lower quadrant

of the abdomen, are characterized by a succession of little popping noises and faint gurgling. These sounds indicate that the ascending and first part of the transverse colon are more active than the remainder of the large intestine. The sounds start in the transverse colon and their advance can be clearly traced. The sounds can be heard first faintly, then louder and louder, then gradually more faintly again. If the stethoscope is changed to a position farther along the small intestine, the sounds can be again heard passing through the same phases as before. Whether the observation of the sounds of the stomach and intestines is to be of clinical importance will depend upon whether or not there are typical variations in different diseases of the alimentary tract. The author suggests that the method might be used to separate the somewhat vague expression, motile insufficiency, into its two factors, absence of peristalsis and pyloric obstruction.

It is interesting to note the rapid multiplication of reports of congenital hypertrophic stenosis of the pylorus during the past year. Until a year or two ago practically all the cases that had been reported, with few exceptions, occurred in Germany, France and England. Now, that the symptom complex has been so definitely pictured, cases are being recognized in considerable numbers in America. Rob recites such a case with recovery through medical treatment. The author reviews the literature and lays stress upon the fact that from 80 to 85 per cent of all cases occur in male children. Fisk, Fischer, Putnam, Block and others have reported cases.

Kast gives Head's theories regarding the superficial sensitive zones of the skin accompanying diseases of intestinal organs, reviews the investigations of other men regarding them (Muller, Willoughby, Scherren, Lenander and others), and reports his investigation on three hundred cases, in two hundred of which he has positive information (gastritis acida 42, carcinoma of the esophagus 5, carcinoma of stomach 12, stomach ulcer 26, appendicitis 6, acute and subacute cholecystitis 6, and the remainder made up of combined conditions, such as chronic intestinal catarrh, heart and lung disease, anemia, arteriosclerosis, etc.). He concludes from these investigations (1) that zones described by Head do occur; (2) however, that they are very inconstant; (3) that they depend not seldom upon the individual sensibility, and are compared to local "neurasthenia;" (4) that the cause of perceptions of the stimulus of internal organs is yet indefinite. He advances the idea that the oft-repeated muscular contractions may cause local anemia, or by repetition of impulses, fatigue of muscles or ganglia and thereby produce these perceptions; (5) a zone may have different forms of stimuli for its production and a differentiation is not possible for a diagnosis; (6) the zone for ulcer of the stomach is very frequently found in nervous, anemic and poorly nourished patients in whom the pain is severe. But he also found

them entirely absent even in these individuals, and one can draw no conclusions from their absence; also, that it does not place the location of the ulcer; (7) that they are frequently found present in cholelithiasis and appendicitis, but these, especially appendicitis, occur with other conditions, iliocecal and iliocolic diseases, spasm of the colon, etc.; (8) they do not differentiate the conditions of one region; (9) a diagnosis of the stage of the disease cannot be made from them; (10) they are of no value in differentiating conditions of one region from another, sometimes when the other symptoms may be common to both; (11) no conclusions as to the pathological conditions can be drawn from them.

Battle, under the head of "Acute Abdomen," reviews in a very interesting manner various abdominal conditions, which are apt to be met with and require immediate attention upon the part of the physician. In this connection he discusses appendicitis, ulcer of the stomach, perforations of duodenal ulcer, ulcer of the jejunum, perforations in typhoid fever, stercoral ulcers, intestinal obstruction, volvulus Meckel's diverticulum. The difficulties that confronts a physician in cases of this sort are at best, trying. The diagnosis must depend rather upon the clinical signs and the history of the case, rather than upon the physical examination. This article gives to one an excellent idea of the train of symptoms in these conditions.

The employment of the various diagnostic methods of determining the renal sufficiency is rapidly seeking its proper level. The consensus of opinion among those who have given much thought to the subject, Kövesi, Lichtenstern and other, is that no one method may be relied upon absolutely, but that the various methods, viz., cryoscopy, phlorydzin, methylene blue, etc., must be employed and conclusions drawn from a comparison of results, and that, above all, the ordinary examination of the urine and the clinical manifestations must always be taken into consideration. Cabot urges the importance of determining the sufficiency of the kidneys in diseases of that organ through a careful observation of symptoms, characteristics of the urine, evidences of uremia, dropsy, cardiac involvement, etc., rather than to depend entirely upon the finding of albumen and casts. These, alone, do not permit of a diagnosis of nephritis. He recommends, especially, the dilution tests, the concentration test, and the capacity of the kidneys to excrete certain substances. He finds that in the early stages, for instance, of acute renal insufficiency, the kidney loses the power to secrete a dilute urine, while, on the other hand, in cases of chronic interstitial nephritis, the kidney continues to secrete a concentrated urine, even though the water is restricted. Neudorfer recommends highly the employment of cryoscopy in the determination of the functioning powers of the kidney. Kummel was one of the first to point out its importance, and claims never to have had a mishap in the 160 cases of nephrectomy in which he employed this test.

Neudorfer reviews the technique of the procedure and recommends some valuable points.

Dwight also believes that albumen in minute quantities is not only normally found in the urine, but is a normal constituent of the urine. Especially after severe exercise and mental strain it is constantly found in traces. Only when the albumen is accompanied by true renal casts may we say that it is of renal origin. Warfield, basing his conclusions upon a wide experience in insurance work, also believes that too much significance must not be attributed to the finding of casts, unless accompanied by physical manifestations of kidney disease. Basing his conclusions upon his own observations, as well as upon a careful review of the literature, he believes that hyaline casts have their origin from the cells of the kidney which undergo changes in the tubules, and that granular hyaline and waxy casts originate from the same source.

The Stokes-Adams syndrome has received much attention, and cases are now being reported from various sources. The condition is characterized by dizziness, bradycardia, high arterial tension, accentuation of the second aortic, and precordial anxiety. Cases have been described by Osler, Rist and others. The syndrome is supposed to be due to some form of degeneration of the auriculo-ventricular bundle of His. Grumbaum found in autopsy a gummatous growth in the interventricular septum involving this bundle. Jellick, Cooper and Ophuls found anemic necrosis of the septum due to thrombosis of the nutrient vessels near the bundle of His. Steiner reports three cases of Stokes-Adams disease with the typical symptom complex, namely, attacks of syncope bradycardia. In one case the pulse ranged from 37 to 19; in another about 40 a minute. Hay and Moore record a case of Stokes-Adams disease in its second stage, that of apileptiform or epileptiform diseases.

LITERATURE REFERENCES.

- Adam—Berliner. Klin. Wochen., June 11, 1906.
- Aldor—Wiener. Klin. Wochen., July 26, 1906.
- Aldor—Berliner Klin. Wochen, No. 38, 1906.
- Battle—Lancet, Jan. 27, 1906.
- Benedict—New York State Journal, May, 1906.
- Bennett—Lancet, No. 17, 1906.
- Block—Berliner Klin. Wochen., July 20, Aug. 6, 1906.
- Boas—Grenzgebiet, Med. und Chir., Vol. 13.
- Boas—Volkmann's Sammlung, No. 387.
- Bondi—Wiener. Klin. Wochen., Aug. 23, 1906.
- Brusch—Zeitschrift für Klin. Medicin., Vol. 58.
- Cabot—New York Med. Journal, May 12.
- Cabot—Journal Amer. Med. Assn., March 17, 1906.
- Cannon—Journal Amer. Med. Assn., Jan. 20, 1906.
- Dieulafoy—Presse Medicale, No. 32.
- Dwight—Medical Examiner and Practitioner, March.
- Eichler—Berliner Klin. Wochen., No. 48, 1905.
- Einhorn—Medical Record, Feb. 10, 1906.
- Erlenmeyer—Deutsch. Med. Wochen., Vol. 32, No. 7.
- Eve—British Med. Journal, April 7, 1906.

- Ewald—Berliner Klin. Wochen., No. 9, 1906.
Falloyse—Presse Medicale, Vol. 14, No. 48.
Fischer and Sterndorf—Archiv. of Pediatrics, May.
Fisk—Annals of Surgery, July.
Friedenwald and Rosenthal—New York Med. Journal, Aug. 11.
Gant—Boston Med. and Surgical Journal, Sept. 6, 1906.
Gaupner—Deutscher Medicin. Wochen., No. 26, 1906.
Gorgas—Journal Amer. Med. Assn., Feb. 3, 1906.
Greenbaum—British Med. Journal, Feb., 1906.
Goldschmuecker—Central fur Grenzgebiet. Med. und Chir., No. 3, 4, 5, 1906.
Haberman—Lancet, July 7, 1906.
Hecht—Muenchner Med. Wochen., No. 7.
Hay and Moore—Lancet, Nov. 10th.
Holzknecht—Mitteilungen. Radiologische Diag. und Therap., Vol. 1, No. 1.
Hemmeter—Archiv. Verdauungs Krankheiten, Vol. 12, pr. 5.
Janeway—Medical Record, March 17, 1906.
Jaworski and Korolewicz—Wiener Klin. Wochen., No. 38.
Jellich—Cooper and Opluls—Journal Amer. Med. Assn., Mar. 3, 1906.
Korwitz—Archiv. Verdauungs Krankheiten, Vol. 12, Pr. 4.
Kuehn—Muenchner. Medicin Wochen., No. 58, 1905.
Mayo—New York State Journal of Medicine, Jan., 1906.
Mummery—British Med. Journal, No. 23, 1906.
Neuendorfer—Mitteil. aus den Grenzgebiet. der Med. und Chir., Vol. 16, No. 1.
Osler—Lancet, No. 14, 1906.
Petitti—Berliner Klin. Wochen., No. 6, 1906.
Putman—British Med. Journal, Oct. 13th.
Rob—Lancet, July, 1906—July 23d.
Rodhe—Hygiea, Vol. 58, No. 9.
Rosengast—Muenchner. Medicin Wochen., No. 20, 1906.
Robson—Lancet, Dec. 23, 1905.
Rosenheim—Deutscher. Med. Wochen., No. 41, 1905.
Salus—Central. fur Grenzgebiet. Med. und Chir., No. 5, 1906.
Senator—Deutscher. Med. Wochen., No. 3, 1905.
Schmidt—Berliner Klin. Wochen., No. 14, 1906.
Schmidt—Test Diet in Intestinal Disease, 1906.
St. Helen—Orvosi. Hetilap, No. 38, 1905 (abstract).
Stengel—Medicine, June.
Schuele—Archiv. fur Verdauungs Krankheiten, Vol. XI, Part 6.
Steiner—Boston Medical and Surgical, Aug. 9th.
Turck—Journal Amer. Med. Assn., June, 1906.
Tuttle—Journal Amer. Med. Assn., Aug. 11, 1906.
v. Schroeder—Wiener. Klin. Wochen., Aug. 16, 1906.
Washburn—The Clinical Review, Nov., 1906.
Yankauer—Medical Record, No. 6, 1905.

DIAGNOSIS.

IN CHARGE OF

ALBERT E. TAUSSIG, M. D.

Physical Diagnosis—After all these years of careful work and prolific writing it would seem that the last word must have been said concerning methods of outlining the area of cardiac dulness. The routine use of the x-ray has, however, demonstrated that the usual methods of percussion give us information as to the pulmonary boundaries, but not at all as to the true dimensions of the heart. It was not until Goldscheider last year, elaborating an old suggestion of Turban, described his method of orthopercussion that a method was found by which the cardiac outlines obtained on percussion could be made to coincide with those of radiography. Goldscheider's method essentially is as follows: The percussion must be done so gently that in a quiet room the sound is only just audible to the ear held close to the percussion finger; only the tip of the plessimeter finger must be held against the chest; the percussion must be done only in the intercostal spaces not over the ribs; the direction of the blow as one passes around the chest must not be perpendicular to the thorax wall, but should always be kept sagittal, i. e., parallel with a line perpendicular to the sternum. This method, at first received rather coldly, has been extensively tested during the past year and has met with general commendation. Thus Treupel and Engels,¹ as the result of a large series of observations, concluded that orthopercussion surpasses all other known methods of determining the outlines of the heart by percussion and gives valuable information where other methods fail, as in advanced emphysema. They outlined the heart, first, by this method and then by the orthodiagraphic use of the X-Ray. The two results coincided remarkably. Curschmann² has had the same experience. He advises that the patient be examined in the recumbent posture and during shallow respiration. By this means an accurate outline not only of the heart but also of the great vessels can be obtained. Meyer and Milchner³ state that this method alone enables one accurately to outline the infantile heart. In children the throax is so elastic and resonant that the ordinary methods of percussion give very misleading results. It would seem, in brief, that orthopercussion really represents a notable advance in physical diagnosis. Its results are even more trustworthy than those obtained with the X-rays, unless the latter are used with all orthodiagraphic precautions.

Another useful method recently suggested by Goldscheider⁴ consists in comparing the results obtained on outlining the heart as the patient slowly rolls from the prone position until he lies on his left side. The force of gravity pulls the heart towards the left and brings it nearer to the chest wall so

that its left edge as found by percussion approaches the axillary line and the apex beat becomes more prominent. Both these changes will be exaggerated if the left ventricle be slightly enlarged and the blood pressure high. Goldscheider believes that in this way a beginning hypertrophy of the left ventricle, especially if due to arterio-sclerosis, can be made out earlier than by any other means at our disposal.

As regards both treatment and prognosis, the determination of the cardiac outlines must yield in importance to the measurement of the ability of the heart properly to do its work. Many attempts have been made to solve this problem, none with entire success. Gräupner⁵ suggests a new method. The systolic blood-pressure is first carefully measured with the patient at rest. He is then made to perform a moderate amount of work and the blood-pressure repeatedly measured at intervals of a few minutes. In health the pressure rises slowly and then quickly falls to normal. In moderately incompetent hearts the blood-pressure first rises sharply, then falls below normal, slowly to rise again. The greater the cardiac incompetency the more profound and enduring is the fall of pressure after exercise. Trustworthy results are however obtained only if the amount of exercise is very moderate. Gräupner suggests slow extension of both legs against a slight resistance, with the patient in a semi-recumbent posture.

Levy⁶ has been testing Katzenstein's method of determining the functional power of the heart. After determining the blood-pressure and pulse-rate of the reclining patient, both of the femoral arteries are compressed with the middle finger of each hand at Poupart's ligament, the other fingers testing whether the compression is absolute. With normal heart energy, the blood-pressure then rises from 5 to 15 mm. of mercury, while the pulse remains unaffected or is slowed. On relinquishing the compression, the blood pressure gradually returns to normal. In case of hypertrophy of the heart, aortic insufficiency, aortic sclerosis or nephritis, the blood-pressure rises much higher during the period of compression. A weak heart, on the other hand, is not able to raise the blood-pressure when the obstruction to the circulation is interposed, and with a much enfeebled heart the pressure may even sink below normal. In both of the last conditions the pulse is accelerated. Levy's researches have confirmed the great value of this means of determining the power of the heart. It is especially instructive in examining the heart after acute infectious diseases and in anatomic cardiac lesions. Its results are, however, not trustworthy in neurotic or very excitable patients. Here, as in all other similar methods, the most reliable results are obtained after the patient has grown accustomed to the necessary manipulation.

As the result of a considerable number of observations both pathologic and clinical, Saathoff⁷ comes to some interesting conclusions regarding aortic aneurism. This disease, when due to syphilis, has its beginning

in an endarteritis of the vasa vasorum. The resulting degeneration of the aortic wall causes the latter slowly to yield to the blood-pressure, thus producing a dilatation. This early stage of the disease can be well made out by the use of the fluoroscope and Saathoff urges the routine use of X-ray examinations in all cases of obscure thoracic disease. Where an X-ray apparatus is not at the disposal of the clinician, another sign is often useful. The beginning dilatation, if not situated too far from the heart, produces a widening of the aortic orifice and thereby all the signs and symptoms of aortic regurgitation. He considers this observation of the greatest importance and urges that every case of aortic insufficiency that cannot be explained as the result of arterio-sclerosis or of a rheumatic infection should be provisionally considered as one of beginning aortic aneurism. At this period a vigorous anti-syphilitic treatment may still result in a *restitutio ad integrum* and should never be omitted.

Some years ago, Garland, an American, pointed out that the upper boundary of the area of dullness, posteriorly, in pleuritic effusions was not usually a straight line, but that, between the spinal column and the area of dullness, a resonant triangle could be made out with its apex downwards and its base fusing with the tympanitic resonance above. This observation, "Garland's sign," has ordinarily been ignored by the textbooks. Krönig⁸ again calls attention to it and emphasizes its diagnostic importance. His experience, based upon nearly a thousand careful observations, has convinced him that this sign may serve to distinguish a pleuritic effusion from a pneumonia in obscure cases. The patient must of course, be examined in the erect posture. Pollak,⁹ on the other hand, points out that the same observation may often be made in cases of pneumonia where the process is localized near the spine and believes therefore that the sign has no diagnostic value. Such pneumonias, however, would ordinarily present a very different picture from pleuritic effusions and it would seem that in cases where a confusion is possible, Garland's sign, while not pathognomonic, may be of considerable value. In a long and interesting article Rieder¹⁰ points out that there is no method by which so accurate a knowledge of the actual condition of the lung in pneumonia can be obtained as by means of the X-ray. He places a piece of ground glass in front of the fluorescent screen and by means of a paraffine pencil draws on the glass the outline of the pneumonia shadow in the darkened room. The location of the pneumonic area can be accurately made out a day or more before auscultation or percussion gives trustworthy data, the course of the disease can be exactly observed from day to day, fresh foci can be detected at once and finally the important prognostic observation can occasionally be made that pneumonias which apparently end in complete resolution, leave behind them some atelectasis or peri-bronchial thickening. Unfortunately the nature of the required apparatus will for some time to come confine the use of this important diagnostic agent to well-equipped hospitals.

The apparently erratic presence or absence of increased vocal fremitus in pneumonia has caused this sign to seem of comparatively slight diagnostic importance in pulmonary infiltration. Arneth,¹¹ however, as the result of a study of 117 cases of pneumonia in the last few years is lead to believe that the value of vocal tactile fremitus has been underestimated. He finds that with great regularity it is markedly increased in the first and third stage of pneumonia, whereas in the second stage, that of hepatisation, it is usually diminished. He explains this observation by the consideration that during the period of congestion as well as during that of resolution the alveolar tissue is relaxed and therefore transmits the coarser vibrations, which alone can be felt, better than does the lung when distended either normally by air or pathologically by a pneumonic exudate. The vocal resonance is marked in the latter condition because the solid lung transmits well the higher pitched vibrations that are audible but not palpable. If correct, this observation would enable one to distinguish the stage of the disease even when the testimony of auscultation and percussion is dubious. Moreover, a beginning resolution will show itself in an increased vocal fremitus earlier than by a change in the auscultatory signs and an increased fremitus at one edge of the consolidated area would indicate that resolution was beginning there. The exception to the rule is where the amount of pneumonic exudate is slight. Here there will be increased tactile fremitus throughout the disease. Kephallinos¹² believes that Westphal's sign may be of value in the diagnosis of pneumonia, especially in children. The knee jerk was abolished in 49.2 per cent of 65 children with lobar pneumonia, in some cases at a time when the thoracic signs were still dubious. It usually returned promptly with the crisis.

The early diagnosis of pulmonary tuberculosis is of such pre-eminent importance that it occupies the attention of many observers and a considerable literature on the subject appears every year. The careful percussion of the pulmonary apices is clearly indispensable. Minor¹³ has come to some interesting conclusions, based on the marking of the apical outlines in all of his cases during the past six years. He finds that the inner border of the diseased apex is affected earliest, being dislocated outward. The dislocation inward of the outer border usually occurs later. In the earliest cases these two lines do not join at an angle, but run across the shoulder to meet their fellows from the rear. Later, when fibroid shrinkage has set in they often run together to an apex before they reach the border of the trapezius. When considered in connection with the auscultatory and other findings, Minor believes these observations to have great diagnostic and prognostic importance. The significance of a rise in temperature just before the menstrual period is still a matter of dispute. Riebold¹⁴ believes that a diseased condition anywhere in the body may be responsible for this phenomenon. Where, however, no definite lesion can be made out, and in particular where the pelvic viscera are normal,

a premenstrual fever will usually point to a latent tuberculosis. The rise in temperature is best measured per rectum.

The diagnostic utilization of X-rays in diseases of the digestive tract, while less promising than in cardiac or pulmonary affections, is being developed by a number of observers. Thus Cahn¹⁶ reports a number of cases of esophageal disease beautifully demonstrated by means of the fluoroscope. The patients are made to eat thick rice porridge mixed with bismuth subnitrate and are then examined radioscopically. In cases of esophageal stricture, for instance, the esophagus above the stricture can be seen slowly to fill with the opaque masses while below it, unless entirely impermeable, a thin band of food slowly descends to the stomach. Diverticula, dilatations, paralysis of the esophagus can be made out with equal ease. The X-rays are made to penetrate the throat from side to side to avoid the interference of the opaque spinal column. Holzkecht,¹⁷ who has done more perhaps than any other in the radiology of the stomach, is an enthusiastic advocate of this method of gastric diagnosis. The patient is made to swallow a suspension of bismuth in water and the gastric region carefully observed with the fluoroscope. The gastric peristalsis can be clearly seen and abnormalities noted. A muscular insufficiency in the pyloric region, the so-called antrum pylori, is very suggestive of cancer. If the tumor is large and projects into the gastric lumen, it becomes visible as an indentation in the bismuth shadow. Conversely tumors supposed to be gastric, if seen to be disconnected from the gastric shadow, may be proven not to involve the stomach. An otherwise impalpable tumor or foreign body if made out by means of the fluoroscope can sometimes, thereupon, be felt since the attention of the observer is directed exactly to the proper spot. Schütz's results confirm Holzkecht's. In particular, the former believes that when the antrum pylori is poorly filled by means of the bismuth suspension or shows a diminished peristaltic activity, a gastric cancer should always be suspected.

It happens entirely too often that practitioners rest content with the diagnosis of cholelithiasis. It is clear, however, that this diagnosis is insufficient, and that it is often essential, for the inauguration of the proper therapeutic measures, to establish more accurately the location of the stone. Ehret¹⁸ believes that it is often possible to make out with certainty the presence of a stone in the common duct. The presence of three cardinal symptoms, he believes, will always enable us to do this. The first consists in the presence of periodic attacks of fever, the elevation of temperature usually being considerable, in one case reaching nearly 106°. In the second place, these febrile attacks are usually accompanied by icterus, or where there is a chronic jaundice, by an increase in its intensity. Thirdly, the characteristic pain of gallstones is absent, although there may be considerable hepatic tenderness. A choledochus stone may be present without producing all of these symptoms, but whenever all three

are found, such a stone may be diagnosed with certainty. In the seventeen cases in which this symptom complex occurred in his practice, he never failed to find a stone in the common duct. He cites one interesting case of this sort in which a large stone was found in the adhesion between gall-bladder and intestine. The adhesions all about this region were so extensive as to make further dissection very undesirable. On account of the presence of the three symptoms, however, he insisted on a further search, and was rewarded by the finding of a great solitary calculus in the common duct. Moynihan,²⁰ while recognizing the general truth of Courvoisier's law, that in chronic icterus the presence of a large, tense gall-bladder indicates carcinoma, while a small, not palpable one speaks for stone, points out the possibility of exceptions to the rule. When a stone in the cystic duct causes hydrops or empyema of the gall-bladder, or where one in the common duct is accompanied by an acute cholecystitis, we may have a palpable gall-bladder. On the other hand, a cancer of the common duct or of the head of the pancreas may be accompanied by an obliterating cholecystitis and result in a shrunken, impalpable gall-bladder.

In abscess of the liver, the determination of the site of the pus collection is second in importance only to the diagnosis of hepatic abscess itself. Gabbi²¹ points out that in general the intensity of the pain is proportional not to the size of the abscess, but to its nearness to the surface. In one case in which the abscess was near the capsule, the pain was so intense as to require morphine, and yet the abscess was a very small one. In another, to be sure, the pain was severe and paroxysmal, and yet the abscess was deep. Here the pain must have been due to the rapid distension of the capsule. Usually, however, the rule holds good. When the pain is in the scapular region, the abscess may be expected in the convexity of the liver; when it is in the lumbar or intercostal region, the pus will be found near the under surface. Even when the liver is very hard, the abscess may be near the anterior surface. This condition is found in alcoholics with indurated livers. The history, as well as the objective findings, is evidently of great diagnostic importance.

While not at all an opponent of operation in appendicitis, Hawkins²² believes that the appendix is at present removed far too frequently. Every severe pain in the ileo-caecal region is called appendicitis and leads to operation. Many of these patients, however, are not at all relieved by the appendectomy, simply because the pain was due not to appendicitis, but to an entirely different cause. Intestinal neuroses and even mucous colitis may, though rarely, be mistaken for appendicitis. A more frequent source of error in the presence of a true entero-spasm. This may involve any portion of the intestine, but has its usual seat about the beginning or the end of the colon. The pain may be severe and long continued, and is usually referred to the right or left iliac fossa. In the former case a false

diagnosis of appendicitis may readily be made and may lead to unnecessary operation. He reports a number of such cases in which the enterospasm was actually seen when the abdomen was opened. Such patients are usually neurasthenics, and the site of the pain is apt to vary from time to time. In these patients, especially in the absence of fever and leucocytosis, the diagnosis of appendicitis should be made with caution. Armstrong²³ describes a condition which he calls appendicitis pelvica. Here the exudate is situated just above or below the pelvic inlet, and it is chiefly the pelvic peritoneum that is affected. These cases are often overlooked, since there is tenderness neither at McBurney's point nor at any other spot accessible from above. A bimanual rectal examination alone can throw light upon the condition and make possible an early diagnosis. It should therefore never be omitted in obscure abdominal affections. The mortality in these cases is, at present, very high, since they are usually diagnosed too late. At the operation, Trendelenburg's position is advised.

The interpretation of pain supposed to be of renal origin is often a matter of much difficulty. Hutchins²⁴ suggests, as an aid to diagnosis, the injection of some bland fluid through the ureter into the pelvis of the painful kidney. Even in health, the dilatation of the renal pelvis by this means is accompanied by pain, but intelligent patients are usually able to tell whether the pain so produced closely resembles the pain from which they suffer or not. In the former case the presence of some condition leading to permanent or intermittent dilatation of the pelvis may be inferred. In only three of the 100 cases so tested was the information obtained entirely misleading. He describes an instrument whereby the amount of pelvic dilatation may be measured. The procedure itself, under aseptic precautions, seems to be free from danger. Voelcker and Lichtenberg²⁵ have used a similar maneuver in connection with the X-rays. A ureteral catheter is pushed up into the pelvis of the kidney and a warm 5 per cent. solution of collargol injected. An X-ray photograph is then taken. Dilation of the ureter or of the renal pelvis, dislocation of the kidney, ureteral kinks and the like can readily be made out on the plate. Aside from an occasional dull ache, lasting a few hours, the patients experienced no inconvenience. In properly selected cases the method may have some value. In nephrolithiasis, on the other hand, the use of the X-ray has become indispensable and today no operation for this disease is justified if a careful radiographic examination by an expert gives negative results. Holland²⁶ sums up the present status of the matter as follows: 1. When a stone or stones are present in such size as to produce symptoms suggesting the desirability of operation, if a careful and thorough examination is made, such stone or stones can nearly always be shown by X-rays. And this would also apply to the presence of stone even if the symptoms alone were not sufficient to demand operation. 2. In most cases when shadows

are shown, the size, shape and position can be relied on in diagnosing them as from kidney or ureteral stones. In other cases, when doubt may arise as to the cause of the shadows, the experience of the examiner will often settle the matter and in some cases stereoscopic radiography, the use of ureteral bougies, etc., can be used as a help. 3. The negative diagnosis can be relied on only when the whole region on both sides is carefully examined and when the plates are taken under the essential condition for successful examination and when they are of the necessary quality in showing sufficient differentiation of the soft structures in the kidney and ureteral regions. 4. There can be no justification for operation or prolonged medical treatment without an efficient X-ray examination being made.

A means of diagnosis, that is apparently not receiving due recognition, consists in the auscultation of the spine, sacrum and pelvis. Crepitation over these bones, audible with the stethoscope, will, according to Ludloff,²⁷ occasionally aid in clearing up an obscure diagnosis. Where elderly women complain of sacral pain and where inspection and palpation as well as a gynecologic examination are negative, auscultation over the junction of sacrum and spine may reveal a grinding and cracking sound on change of posture. Radioscopy will then show the presence of an arthritic deposit at this point, and proper orthopedic treatment will give relief, when all other measures have failed. If the deposit is at the point of emergence of the sciatic nerve, an intractable sciatica will result, whereas in the upper cervical region, occipital neuralgia may follow. In both conditions careful auscultation of pelvis or vertebral column will often throw light upon the nature of the lesion. In traumatic cases the results are even more striking. He quotes a case in which, after fracture of the clavicle, the patient's other pains were ascribed to hysteria or simulation. For eight years she was unable to obtain relief, until finally auscultation revealed a creaking over the seventh cervical vertebra. A radiogram revealed a fracture of this vertebra, which had evidently occurred when the clavicle was broken. Koplik²⁸ advocates percussion of the skull in suspected hydrocephalus, whether due to acute cerebrospinal meningitis or to the onset of a tuberculous meningitis. When the lateral ventricles are distended with fluid the percussion note obtained over the region of the lateral ventricles will have a tympanitic, sometimes almost a musical note. The exact location of the area of greatest resonance will vary somewhat with the position of the head. In these cases of acute hydrocephalus, prompt lumbar puncture is often a life-saving operation. Koplik believes that percussion of the skull alone gives trustworthy information as to the presence of an acute increase of fluid in the lateral ventricles or in the subarachnoid space.

Blood.—Of all the many blood-stains, the one now in greatest favor for routine work consists in the use of a methyl-alcoholic solution of

eosinate of methylen blue with or without the addition of some form of methylen azur. A multitude of new stains are constantly being advocated, but as a rule they are merely modifications of the above and do not represent any real improvement. May²⁹ has suggested a method that has at least the advantage of simplicity. The blood spread is stained according to Jenner, then placed for one minute in distilled water. Without drying the specimen, one drop of a 0.5 per cent aqueous solution of methylen azur is added and the preparation rocked a little to insure an equal distribution of the stain. In two to four minutes the spread is dried and is ready for examination. The method is said to give clear and brilliant pictures free from precipitate. Viereck,³⁰ however, contends that the method fails to give an adequate stain of the chromatin in tertian and quartan malarias, and that the preparations do not keep well. It seems to offer no advantage over the satisfactory Wright's stain. Assmann³¹ suggests the following modification: The unfixed spread is placed on a slide in a Petri dish and covered with forty drops of Jenner's stain. After three minutes, 20 c.c. of distilled water, to which five drops of a 0.1 per cent solution of potassium carbonate has been added, are poured over the specimen and the dish rocked until the stain has been washed off. Five minutes later, the specimen is removed from the wash-water, dried and examined. Sections are treated similarly, only that the potassium carbonate is replaced by an equal amount of acetic acid. The method is said to give excellent results.

The leucocyte count has won for itself a well-recognized place in surgical diagnosis. The differential leucocyte count is not yet as generally used as its value warrants. Gibson³² believes that the differential count and its relation to the total leucocytosis is at present the most valuable diagnostic and prognostic aid in acute surgical diseases that is furnished by any of the methods of blood examination. Its chief value lies in enabling us to recognize the existence of suppuration or gangrene as shown by an increase in the relative percentage of polymorphonuclear neutrophil cells out of all proportion to the total leucocytosis. The greater the disproportion the more sure are the findings and in extreme disproportions, the method in his hands has shown itself practically infallible. A negative finding, in which the relative increase in the neutrophil cells is not marked, is of much less value, but suffices to render the existence of a severe suppuration improbable. The attempt to utilize blood examinations in the diagnosis of obscure affections of the digestive tract, in particular for the differentiation of carcinoma from ulcer or beginning pernicious anemia, has, as Ewald³³ points out, practically ended in failure. Even the absence of a digestive leucocytosis is of little diagnostic value for gastric cancer. In advanced cases of the latter, the results of blood examination are fairly constant, but here the results of the method are not needed for diagnosis. In suspected trichinosis, on the other hand,

the presence of an eosinophilia is of great diagnostic value. In seven cases, Stäubli³⁴ has found it constantly present. The eosinophilia begins to show itself some nine days after the infection takes place, and is coincident with the migration of the embryos into the blood current. It is probably due to a reaction on the part of the organism to substances taken up by the blood from the degenerated muscle substance or perhaps from the embryos themselves. He believes that a rapid destruction of the lymphocytes as shown by a relative decrease in their numbers, is a bad sign, prognostically. In the four cases that terminated fatally he noted the presence of Kernig's sign and an absence of knee jerks. In all of his cases, the urine showed a well-marked diazo-reaction. As regards the eosinophilia, it may be observed that in order to be significant, it must be somewhat persistent. In a case recently observed by the writer of this abstract, trichinosis was suspected and a marked eosinophilia was observed. The latter, however, disappeared after a few days, and further observation of the case rendered the diagnosis of trichinosis improbable.

Given³⁵ has made some interesting observations on the blood in pregnancy. During the last months a slight leucocytosis, involving chiefly the polymorphonuclear elements, is constant. It becomes very marked during labor and then rapidly disappears. During the period of uterine involution, an outspoken lymphocytosis makes its appearance. The more rapid the process of involution, the more marked the lymphocytosis, so that this symptom seems to have considerable prognostic value in determining the prospect of a prompt recovery of the patient.

Stomach Contents and Stool.—Animal experiments, especially with Pawlow's methods, show, beyond question, that the secretion of the gastric juice is dependent upon two groups of factors. In the first place, the sight of food as well as the tasting and chewing it, brings about a marked gastric secretion; secondly, the food itself, after it reaches the stomach, stimulates the mucosa reflexly or directly to further production of HCl and ferments. Kast³⁶ has succeeded, by means of experiments upon himself and upon a patient with a gastric fistula, in showing that the same rules hold true in man. It follows that in interpreting the results of an analysis of a recovered test-meal, the physical circumstances affecting the patient must be well considered. If the patient is very hungry, the test-meal appetizing, the time spent in chewing and enjoying the meal excessive, the psychical element influencing the gastric secretion will be correspondingly great. On the other hand, dread of the stomach tube, an unappetizing test-meal, unpleasant surroundings while the meal is being eaten, may not only bring about an absence of the psychical stimuli of secretion, but may actually tend to inhibit that portion of the secretion dependent upon intra-gastric stimuli. The routine analysis of gastric contents, without regard to the above factors, may well lead to false conclusions. Dörner³⁷ calls attention to the fact that the use of Ewald's test-

meal alone is occasionally misleading. A stomach may be able perfectly to care for tea and toast, and yet fail in digesting a heavier meal. The most certain results are obtained by the analysis of the stomach contents first after a test breakfast and upon a subsequent day after a test dinner. If, for external reasons, only one analysis is to be made, the test dinner should be given the preference. In achylia gastrica, alone, the findings after an Ewald breakfast are more decisive than after a test dinner. Einhorn⁸⁸ attempts to test the digestive power of the gastrointestinal tract in an ingenious manner. He draws bits of solid foodstuffs through the openings of glass or porcelain beads, ties them in, and has the patient swallow them. The beads are then recovered in the feces, and an examination readily shows whether the food attached to them has been digested. Beads similarly loaded, attached to a thread, can be swallowed and withdrawn after a suitable interval, thus testing the digestive power of the stomach without the use of the tube. The healthy stomach should digest completely catgut and fishbones. If the intestinal functions are normal, raw meat, boiled potato and mutton fat should be completely digested and absorbed. If these substances are still found attached to their beads in the stool, a disturbance of intestinal function may be inferred. The disappearance from its bead of raw thymus is a good test for intact intestinal and pancreatic secretion. Simon⁸⁹ suggests a new test for free hydrochloric acid in stomach contents. A trace of pure gum-guaiac is dissolved in alcohol containing 20 per cent. spirit. ether. nitros. and is carefully poured over some of the filtered stomach contents in a test tube. A white ring of precipitated guaiac forms at the zone of contact and quickly turns blue in the presence of free HCl. The free acid liberates nitrous acid from the spirits of nitre, the latter oxidizes the guaiac and a blue color results. Organic acids may also give a positive reaction, but only in concentrations, such as are never found in the stomach contents. Connective tissue, as is well known, is digested only in the stomach, and there only in the presence of hydrochloric acid. Hess⁹⁰ recommends that, in cases where the use of the stomach tube is undesirable, the patient be given some very rare chopped beef. If, on inspecting the stool, connective tissue fragments are found, a lack of hydrochloric acid in the stomach may be assumed.

Ziegler⁹¹ maintains that the earliest and most certain sign of gastric cancer is the presence in the stomach of minute remnants of food at a time when the viscus should normally be empty. Even where the motor functions of the stomach are macroscopically normal, the presence in the fasting stomach of these minute food fragments suggest cancer. In these cases lactic acid bacilli are nearly always present and persist in spite of repeated lavage. Where both of these symptoms are present, persistent microscopic retention of food and persistent lactic acid bacilli, the diagnosis of cancer is nearly certain. In non-malignant cases the stagna-

tion is either macroscopic or entirely absent. The lactic acid bacilli in these cases are also readily removed from the stomach by repeated lavage.

The most interesting of the newer gastric tests is unquestionably Sahli's desmoid reaction. A little methylen blue, salol or iodoform is wrapped in a tiny square of rubber tissue folded so as to form a bag, the opening of which is securely tied by means of catgut. As the latter, according to Sahli, is readily digested by the normal gastric juice, but not in the intestines, the appearance in the urine of methylen blue, salicylic acid or iodine speaks for an adequate gastric digestion. Their failure to appear, speaks for absence of hydrochloric acid. This method has been tested during the past year, with very diverse results. Kaliski⁴² expresses himself most enthusiastically. His experiences with patients and with healthy individuals leads him to conclude that the test gives very accurate results. When the examination of the urine is positive in from four to seven hours, hyperacidity is present; if in from seven to twelve hours, the gastric secretion is normal; if not until the second day, there is subacidity or motor insufficiency. The test was also found entirely reliable by Kuhn.⁴³ In fifty-four cases, it invariably proved an accurate and delicate criterion of the presence of free hydrochloric acid in the stomach contents. His cancer cases, as well as those of achylia gastrica, always gave a negative result. Horwitz⁴⁴ prefers the use of the stomach tube, but states that in his experience the desmoid reaction gave trustworthy results when for any reason the use of tube was contraindicated. He, as well as Holzknecht,⁴⁷ prefer the combination of Sahli's method with radioscopy. The little bag is filled with bismuth subnitrate and the patient's stomach observed from time to time by means of the fluoroscope. The little bag is then visible as a round black spot in the lowest portion of the stomach. When the catgut is dissolved, the bismuth escapes and, instead of a black spot, produces a diffuse shadow throughout the stomach. If this occurs within an hour and a half, extreme hyperacidity is present; if in two hours, there is moderate hyperacidity; if in two and a half hours, the gastric juice is normal, and a longer period of time indicates subacidity. If the bag leaves the stomach unopened, there is complete anacidity. Of course, these numbers are not to be taken too literally. Alexander and Schlesinger⁴⁵ come to very different conclusions. They believe the test to be worthless, because, in their experience, the little bag sometimes passes through the stomach unopened in spite of the presence of normal gastric juice, and on the other hand, because the catgut thread is sometimes digested in the intestine. Saito⁴⁶ found that, *in vitro*, a mixture of pancreatic and intestinal secretion was able to digest catgut threads, and Einhorn⁴⁷ showed, by means of his bead method, that catgut may be digested in the intestine. In a reply to various criticisms, Sahli⁴⁸ maintains the efficacy of his method, claiming that the reason for poor results lies in a failure to carry out in detail the instructions given by

him in his original communication.⁴⁹ The rubber tissue must be of a definite thickness and quality, the catgut must be of the proper sort and tied in a certain manner, etc. While these diverse results do not, as yet, permit a definite judgment upon the desmoid test, it does seem at present that the more carefully Sahli's directions are carried out, the more trustworthy are the results.

In the examination of the feces, the test of greatest importance is that for occult bleeding. The finding of traces of blood, too small to be recognized by ordinary means, is often indispensable for the diagnosis of obscure cases of gastric cancer or ulcer. Boas⁵⁰ recommends the test given by v. Storch for the recognition of pasteurized milk. The stool is rubbed up with twenty drops of glacial acetic acid and extracted with ether. To this extract are added one or two drops of a 1:200 solution of p-phenylenediaminechloride. Upon the addition of one c.c. of a half-normal alcoholic solution of potassium hydrate and ten to fifteen drops of 3 per cent hydrogen peroxide, an olive-green color soon changing to violet is formed at the bottom of the test tube in the presence of traces of blood. The test is also applicable to stomach contents. Schumm and Westphal⁵¹ advocate the following method: The stool is first extracted with alcohol and ether aa., the residue rubbed up with glacial acetic acid, treated with absolute ether, the extract washed with water and mixed with a little fresh alcoholic solution of benzidine (Merck) and an equal amount of hydrogen peroxide. A blue color indicates the presence of blood. Schlesinger and Holst,⁵² however, point out that this somewhat elaborate method is far too delicate for clinical use. Not only will a little red meat in the food cause a positive reaction in the stool, but a meat diet may still simulate an occult bleeding more than a week after the patient has been put on a meat-free regimen. They have modified the test so as to make it simpler and less delicate. A fragment of stool is stirred up with a little water, boiled for an instant and then added to a mixture of an acetic acid solution of benzidine with hydrogen peroxide. A blue color indicates blood. Even in this form the test is very delicate and requires, in order to be trustworthy, that the patient be on a meat-free diet.

Urine.—Cabot⁵³ again maintains the impossibility of determining the anatomic changes that have taken place in the kidney by means of urine examination, and urges that the attempt should be made to determine the functional power of the kidneys rather than the histologic changes. Albumen and casts alone never demonstrate the presence of a nephritis. The physical characteristics of the urine, the presence or absence of uremia, dropsy or cardiac involvement, together with the general course of the disease, give much more valuable information. The ability of the kidneys to secrete a dilute urine, after the profuse ingestion of liquids, gives valuable information as to renal sufficiency. Even this test, however, is not infallible. Tognetti⁵⁴ describes a modification of the tannic acid test

for albumen. Tannic acid, as is well known, is one of our most sensitive tests for albumen, but has not been applied to the urine, because it also precipitates other urinary constituents. His modification is said to obviate this difficulty. Equal parts of urine and of a 1.5 per cent alcoholic solution of tannin are mixed and heated and as much 33 per cent hydrochloric acid as was taken of urine and of tannin solution is added. An opacity indicates albumen, as other urinary constituents are not affected. Bile, if present, must first be removed. The test is extremely delicate, revealing one part of albumen in 200,000 of urine. Buchner⁵⁵ suggests a simple method of determining the percentage of albumen in the urine. Eight c.c. of clear filtered urine are boiled, a few drops of nitric acid are added (enough to render the mixture acid) and 2 c.c. of a saturated solution of salt. The whole is well shaken and poured into a graduate. The coagulated albumen promptly settles to the bottom and, after standing one hour, each c.c. of the sediment indicates one per thousand of albumen. If the precipitate is too lumpy, it must be stirred by means of a glass rod. If only an opalescence without precipitation occurs, there is present less than 0.1 per cent albumen. Comparative tests, he states, indicate that this method is surprisingly accurate. Krokiewicz's⁵⁶ reaction for bile pigments is extremely sensitive. Equal parts of sulphanilic acid and sodium nitrite solutions, each 1 per cent, are mixed in a test tube and all poured out except about 0.5 c.c. To this remainder a few drops of the suspected fluid (urine, stomach contents, etc.) are added. In the presence of bile the mixture turns red, and on the addition of a drop or two of hydrochloric acid, a permanent violet color results. None of the usual sources of error of bile tests apply, he states, to this method.

Bacteriology.—Gaetgens⁵⁷ describes a modification of the Widal reaction which may be useful for rapid work. The patient's serum is diluted with 100 parts of physiologic salt solution containing a suspension of typhoid bacilli and is centrifugated for ten minutes. At the bottom of the tube will always be found a small patch of sediment about which, if the test is positive, may be seen a number of tiny lumps of agglutinated bacteria. The tube is then well shaken. If the reaction is negative, a homogeneous opalescence results and microscopically only isolated bacilli are found. If positive, macroscopic lumps can often be seen after shaking, and under the microscope, clusters of ten or more bacilli will be found, more or less closely agglutinated. It seems probable that the same objections that apply to other rough and ready Widal methods will hold true for this one.

The earliest and certainly, if positive, the most trustworthy method of diagnosing typhoid fever consists in the cultivation of typhoid bacilli from the blood of the patient. The difficulty and complexity of the procedure has hitherto stood in the way of its general use. Conradi⁵⁸ has described a simplified method which makes it suitable for the general practitioner.

His culture medium consists of ox-gall, to which 10 per cent of peptone and 10 per cent of glycerine have been added, the mixture being contained in test tubes and sterilized. Eight to thirty drops of blood are withdrawn from the patient's ear directly into the tube, under the usual aseptic precautions. The tubes are placed in the incubator over night, whereupon the bacilli, if present in the blood, will have grown profusely. The contents of the tube may be poured over agar plates and the resulting colonies identified by the usual methods. The absolute identification of the bacilli meets with the usual difficulties, but for rough work the finding of typhoid-like bacilli suffices. As regards the rationale of the method, the bile inhibits the bactericidal power of the blood, the peptone aids in the growth of the typhoid bacilli, whereas the glycerine tends to prevent the multiplication of contaminating saprophytes. Keyser⁹ has tested this method exhaustively and has found it thoroughly reliable. It is possible to demonstrate the presence of typhoid bacilli in the blood long before the Widal test becomes positive. Meyerstein¹⁰ has found that ox-gall, which does not keep well, may be readily replaced by the crystallized bile salts, and Fornet¹¹ states that it is not necessary to place the fresh blood directly into the culture medium. The patient's blood may be obtained at the bedside, allowed to clot, and this clot carried home and shaken up in a Conradi culture tube. In Germany these tubes may now be had of the dealers; it is to be hoped that before long some manufacturing firm may place them on the market here.

Among the useful books on clinical diagnosis that have appeared during the past year, the following may be mentioned:

- Caillé. *Differential Diagnosis and Treatment of Disease*. Appleton.
- Kilmer. *Physical Examination of Infants and Young Children*. Davis.
- Emerson. *Clinical Diagnosis*. Lippincott.
- Heitzman. *Urinary Analysis*. Wood.
- Kintzing. *Signs of Internal Disease*. Cleveland Press.
- Albers-Schönberg. *Die Röntgentechnik*, Gräfe u. Sillner. (Hamburg.)
- Oerum. *Methodik*, etc. Bergmann (Wiesbaden).
- Gaultier. *Précis de Coprologie*. Bailliére (Paris).
- Guiart. *Précis de Diagnostic*. Rudeval (Paris).

BIBLIOGRAPHY.

Unless otherwise noted, all references are to 1906.

1. Treupel and Engels. *Zeitschr. f. klin. Med.*, No. 2. Interstate, p. 818.
2. Curschmann. *Deutsch. med. W.*, No. 51. 1905.
3. Meyer and Milchner. *Berl. kl. W.*, Nos. 40, 41.
4. Goldscheider. *Deutsch. med. W.*, No. 41.
5. Graeupner. *Deutsch. med. W.*, No. 26. Interstate, p. 671.
6. Levy. *Zeitsch. f. klin. Med.*, Nos. 1, 2.
7. Saathoff. *Muench. med. W.*, No. 42.
8. Krönig. *Berl. kl. W.*, No. 13. Interstate, p. 476.
9. Pollak. *Wien. kl. W.*, No. 40.
10. Rieder. *Muench. med. W.*, Nos. 40, 41.

11. Arneth. Muench. med. W., Nos. 17, 18. Interstate, p. 601.
12. Kephallinos. Muench. med. W., No. 30.
13. Minor. Am. J'l. Med. Sc., Oct.
14. Landolfi. Sem. Med., No. 11.
15. Riebold. Deutsch. med. W., Nos. 11, 12.
16. Cahn. Muench. med. W., No. 2.
17. Holzknecht. Berl. kl. W., No. 5.
18. Schuetz. Wien. kl. W., No. 14.
19. Ehret. Muench. med. W., No. 3.
20. Moynihan. Edin. Med. J'l., May. Interstate, p. 817.
21. Gabbi. Rif. Med., No. 17.
22. Hawkins. Brit. Med. J'l., Jan. 13. Interstate, p. 533.
23. Armstrong. Brit. Med. J'l., Jan. 13. Interstate, p. 533.
24. Hutchins. Am. J'l. Obst., Sept.
25. Voelker and Lichtenberg. Muench. med. W., No. 3.
26. Holland. Lancet, June 2.
27. Ludloff. Muench. med. W., No. 25. Interstate, p. 897.
28. Koplik. Med. Rec., Sept. 29.
29. May. Muench. med. W., No. 8. Interstate, p. 534.
30. Viereck. Muench. med. W., No. 29.
31. Assmann. Muench. med. W., No. 28. Interstate, p. 744.
32. Gibson. Ann. of Surg., April.
33. Ewald. Berl. kl. W., No. 9.
34. Staeuble. Arch. f. klin. Med., No. 3.
35. Given. J'l. Obst. and Gyn., April. Interstate, p. 818.
36. Kast. Berl. kl. W., Nos. 22, 23.
37. Doerner. Muench. med. W., No. 10.
38. Einhorn. Med. Rec., Feb. 10.
39. Simon. Berl. kl. W., No. 44.
40. Hess. Med. Rec., April 28.
41. Ziegler. Zeitschr. f. kl. Med., No. 6.
42. Kaliski. Deutsch. med. W., No. 5.
43. Kuehn. Muench. med. W., No. 50.
44. Horwitz. Arch. f. Verd., No. 4.
45. Alexander and Schlesinger. Deutsch. med. W., No. 22.
46. Saito. Berl. kl. W., No. 40.
47. Einhorn. Deutsch. med. W., No. 20. Interstate, p. 599.
48. Sahli. Deutsch. med. W., No. 30.
49. Sahli. Corresp.-Bl. f. Schw. Aerzte., 1905, Nos. 8, 9.
50. Boas. Centralbl. f. inn. Med. No. 24. Interstate, p. 672.
51. Schumm and Westphal. Zeitschr. f. phys. Chem., Nos. 5, 6.
52. Schlesinger and Holst. Deutsch. med. W., No. 36. Interstate, p. 898.
53. Cabot. N. Y. Med. J'l., May 12.
54. Tognetti. Gaz. deg. Osped., No. 60.
55. Buchner. Muench. med. W., No. 24.
56. Krokiewicz. Muench. med. W., No. 11. Interstate, p. 534.
57. Gaetgens. Muench. med. W., No. 28.
58. Conradi. Deutsch. med. W., No. 2; Muench. med. W., No. 34. Interstate, p. 325.
59. Keyser. Muench. med. W., Nos. 17, 40.
60. Meyerstein. Muench. med. W., No. 44.
61. Fornet. Muench. med. W., No. 22.

SURGERY.

 IN CHARGE OF

 WILLARD BARTLETT, M. D.

An American surgeon, who is today generally acknowledged to be the leading exponent of stomach work, stated less than twelve months ago that in his opinion modern gastric surgery was less than five years old, and the best of it not yet two years old. The most striking advances which the year 1906 has to record in surgery can, I believe with justice, be ascribed to this field. In addition to this, fully as *much* has been written on this as on any other subject, since the appearance of our last progress number.

It is only reasonable to suppose that the time and space at disposal of one reviewer make it impossible to give an adequate general resume of all that has appeared within this time.

The above considerations have impelled me to devote this department to a review of the stomach literature of 1906, and I trust that the reader will agree that this is fairly comprehensive. It seems to me especially fitting that just such a review should have a place in our JOURNAL, which appeals widely to general practitioners. They are the men above all others who should know what is being done in advanced stomach work, since they are the men who first see these cases, in many of which an early diagnosis is the key-note to success or failure in surgical treatment, if such be applicable.

ANATOMY AND PHYSIOLOGY.—Of the numerous articles which appeared last year on the anatomy and physiology of the organ, none takes higher rank than that of Leven and Barret (*Presse Med.* Nr. 63) on comparison of the infant and adult stomachs. In the infant, a large part of the stomach lies to the right of the middle line, while in the adult only the pylorus does this. The lower border of the infant stomach descends considerably more than does that of the other. The stomach of a grown person confines itself almost completely to its contents, while in the infant stomach there is usually a very considerable amount of air above the fluid, which it contains. In the infant the whole stomach contracts at once when food is taken into it. This, however, is very rarely seen in older life. Milk remains in a baby's stomach from 1¾ hours to 2 hours, as a rule.

Holzknicht (*Berliner Klin Wochen.* Nr. 5) like many others mentioned in this review, used bismuth and the X-ray with most gratifying results in determining hitherto disputed points regarding the stomach. He finds that a normal organ is very uncommon and that most of us have a dis-

placement, downward, of the viscus. However, in the perfectly normal stomach the pylorus is its very lowest point. He was further successful in picturing quite a number of cancers which could not be felt or otherwise located, but which were later removed at operation.

One of the recent advances in the diagnosis of stomach troubles comes from Leven and Barret (*Presse Med.*, 1905, Nr. 74) (rev.). The patient is allowed to take a Bismuth pill and is then photographed in various positions, the boundaries of the stomach naturally being determined by the position of the heavy pill, which must always be in the lowest portion of the viscus. The idea is so simple that it should be considered brilliant if efficacious.

The movements of the stomach and intestines were most instructively dwelt upon by Cannon and Murphy in the April number of the *Annals of Surgery*. They fed cats with bismuth and then viewed the stomach motions with the X-ray. They found that the normal organ commenced to functionate within ten minutes after a meal and was empty about three hours later. After intestinal resection, stomach contents were not forced into the intestine until five or six hours after eating, and this is regarded by the authors as Nature's effort to protect the weak spot. The contents passed the situation of an end to end union very much better than it did a lateral union. After the intestine had been ligated, contents went down as far as the ligature and then returned to the stomach. After the blood vessels of the intestine had been thrombosed, both stomach and intestine remained perfectly quiet. All sorts of insults to these viscera resulted in a slowing in their movements.

Brauner (*Archiv. fur Phys. u. Med. Technik*, Bd. 1, Hft. 1. Rev.) writes of his success in stomach diagnosis with the aid of air inflation and bismuth. He was able not only to demonstrate the presence of ulcers, tumors, etc., but in consequence of demonstrating that motions of the pylorus were absent, he properly concluded in one case that the stomach wall was so infiltrated as to make movement impossible. An operation demonstrated the correctness of this rather hair-splitting conclusion.

OPERATIVE TECHNIQUE.—Leriche (*Revue de Chir.*, Nr. 7), contributes a lengthy article on the technique of stomach resection for cancer. He lays great stress on the fact that such an operation must necessarily remove all of the lesser curvature, if the patient is to be substantially benefited. On the other hand the disease is not likely to go far over onto the duodenum, hence, not over 2 to 4 cm. of this viscera will have to be sacrificed. The method of procedure in the clinic at Lyons is as follows:

1. The four cardinal ligatures are applied.
2. The stomach is cut off as high up as desired.
3. The cardiac end is sutured.

4. The rest of the blood vessels running to the greater and lesser curvatures are severed.

5. The duodenum is divided.

6. Same form of anastomosis is made.

The operation of Kocher, which unites the end of the duodenum to the posterior wall of the resulting little stomach, is the one which nearest approaches anatomic conditions, but recurrence which is most likely to take place in this vicinity is likely to give most trouble where this method is followed; however, one point brought out by this author, and not commonly noted, is that a recurrence so situated can always be subjected to a second operation and then some other form of gastroenterostomy done. The chief anatomic objection to the Kocher or the first Billroth method has been that it is hard to mobilize the stump of the duodenum. However, it is possible by cutting the peritoneum to so loosen the gut in every instance that a great deal of space can be gained for treating the upper end of it in any method desired. The "Y" operation may also be used in this connection, but our author, although a Frenchman, very wisely decides against the practicability of doing this.

The undecided question as to whether gastroenterostomy or Finney's operation is the better procedure in ulcer is discussed by White (*British Medical Journal*, Oct. 7, 1905). He states briefly that the great disadvantages of the former operation are vicious circle, the occurrence of ulcer in the wound or gut lower down and infection of the bile passages. He regards all these dangers as avoided by the second procedure mentioned and uses it in practically every case. He reports five such instances in which the patient was completely cured.

Fresh impetus is given to the use of the so-called Finney operation by the three years' experience detailed by the author of the procedure in *Surgery, Gynecology and Obstetrics* for February, 1906. He has now done thirty-three of these operations with uniformly good success. He says that all conditions have been met, such as dilatation of the stomach, dense adhesions, thickening of the wall, acute and chronic ulcer, hemorrhage and spasm. He advises that interrupted stitches be used, by all means. Gastroenterostomy is now used by Dr. Finney only in cancer where a radical operation proves to be impossible. The opening should be 10 cm. long. Postoperative nausea and vomiting are almost absent, due, as the author suggests, probably to division of the pyloric muscle. There has been no case of death due to the operation itself. This subject is brought clear up to date by a letter from Dr. Finney to the reviewer, bearing the date of November 28th. In this letter he states "I am glad to be able to say my experience with the operation of pyloroplasty continues to be satisfactory.

The technique of gastroenterostomy received from Wm. J. Mayo in *Annals of Surgery* for April, what time will probably prove to be its

finishing touch. In this article Dr. Mayo illustrates the method which he and his brother, C. H. Mayo, have been using constantly since July, 1905. It is scarcely necessary to state that it is a posterior no-loop gastroenterostomy. This new procedure may be most readily grasped when it is stated that the stomach and intestines are joined in such a manner that the highest part of the jejunum has its normal direction and relations in no way disturbed, as is inevitable in all earlier methods. After all the sutures are in and the viscera are dropped back into the abdomen, the gut points to the left and downward, which effectually prevents the occurrence of vicious circle.

Brunner gives the results of his stomach operations in the *Beit. zur. Klin. Chir.*, Bd. 49, stating that acid stomach contents have the most pronounced effect upon the development of germs in this viscus. Consequently, one is prepared for the statement that infections most frequently follow cancer operations, because there being little or no acid present in this disease; germs are particularly virulent, and the escape of a comparatively small number is likely to be attended with the greatest trouble. Out of 106 operations, he lost three patients and these from resections. He advances a most telling argument against the first Billroth method when compared with the second. He says that recurrence of cancer is most common in the line of incision through the stomach; naturally enough this must lead to obstruction at the new joint with the gut, if the first method be followed. However, this complication cannot be effective when the second method is followed even though a recurrence take place, and this is borne out in fact. There has been a great deal of trouble in taking care of the stump of the duodenum, the author does this by bringing it up and sewing it to the anterior abdominal wall. He states that many surgeons have lost patients from the stitches giving way at this point. He has had nothing worse than a fistula in consequence of his treatment. He states that he has one patient living seven years after the resection of a cancerous stomach. This is truly encouraging.

In France the "Y" operation for gastroenterostomy has always been popular, although the same can hardly be said of any other land. In Nr. 20 of the *Bull. et Mem. de la Soc. de Chir. de Paris*, Souligou reports two cases in which he did this, but added to the original technique torsion of the jejunum. Both of these were cancer cases, which makes it seem all the more remarkable that the French surgeons should choose the most time consuming instead of the quickest of all the procedures which have been proposed to drain the stomach. No doubt, the "Y" operation is the most nearly perfect from a mechanical standpoint, of all the gastroenterostomies; still, two different anastomoses must be made, and it is time-consuming in the very best of hands.

A new clamp for use in gastroenterostomy and other forms of lateral anastomosis is proposed by Linnartz (*Zent. fuer Chir.*; Nr. 26). This

instrument consists of three branches, the middle one being heavier than the other two, the apparent purpose of it being to hold the opposed viscera in perfect approximation, a thing which is so difficult when two separate clamps are used. The purpose of it differs in no way from that of the simple clamps as used by Moynihan. The further advantage in using this instrument is that the presence of one assistant is thus done away with. The reviewer must state in passing that he saw a similar instrument used in Mayo's clinic before the publication of this author's article. It was stated by W. J. Mayo at the time that an earlier model of the same thing had been devised by a Colorado surgeon many months previously, hence, the German's claim to priority in this matter must be questioned, although no question arises as to his originality.

Another new method of performing gastroenterostomy is described by Pleth in the *American Journal of Surgery* for June. He sews together the opposed viscera with one row of stitches, then pierces each with a long darning needle, the two needles lying parallel to the suture line and close to it; he then places a sort of continued drawstring in front of and parallel to the needles, and after this is done cuts down on to these in such a way as to remove them, after which the drawstring is immediately tightened, and the anterior lips of the wound brought together before contents can escape. The idea seems simple and reasonable, at least it will repay one for a perusal in the original.

A new clamp intended to prevent the escape of stomach and gut contents during gastroenterostomy is described by Maunsell (*Med. Press*, Feb. 28, 1906). It differs very little from the instruments already in use, in as much as it consists of two separate clamps, one for the stomach and the other for the intestines. The value of the new apparatus lies in the fact that these two clamps can be securely fastened in the correct position for suturing, and thus is eliminated the chief drawback to the use of the older instruments.

Joseph described a new method of performing gastroenterostomy in the *Zent. fuer Chir.* of May 19th. This consisted in thrusting one branch of a sharp-pointed clamp through the stomach wall and the other through the intestinal wall. When the clamp is closed it naturally brings together the portions of these viscera which are included between its branches. A row of sutures is then introduced clear around the instrument, and an opening established between the sutures by means of a little hidden knife, which plays between the branches. The instrument is then withdrawn, and the work completed by a single stitch, which closes the resulting opening.

A new method of lateral anastomosis is proposed by Werelius (*Surgery, Gynaecology and Obstetrics*, Vol. II, Nr. 3). It is so similar to Flint's proposal, which is reviewed herewith, as to scarcely need a separate description. Instead of the scissors, however, as used by Flint, this author

cuts through the viscera with a piece of thread between two parallel rows of sutures, which have been tied and thus protects the peritoneum.

A new method of performing gastrostomy is advanced by Prof. Tavel (*Zent. fuer Chir.*, Nr. 23), of Bern. After stating the well-known disadvantages of the older methods, he makes the very interesting proposal to first of all resect about 15 cm. of the patient's small gut, and then, after reuniting the intestine, to sew the mouth end of this small section into the anterior stomach wall and the anal end into the skin. He did this in a number of dogs and one human with the most gratifying results. There was no leakage in consequence of the fact that such a piece of small bowel has always the tendency to propel ingested material toward the stomach.

A new method of making anastomoses in the gastrointestinal tract is the title of an article by Flint (*Archiv. fuer Klin. Chir.*, Bd. 80, Hft. 4) of California, who worked in the laboratory of Paltauf. He bases his reasoning on the fact that it is desirable to perform these operations without opening the cavities of the viscera. He contemplates a lateral union, and his technique is greatly elucidated by half a dozen illustrations. However, it may be possible to give the main ideas in words alone. He sews together with one or two rows of stitches the viscera to be joined and then thrusts into each and out again, parallel to this row of sutures one branch of a peculiar long, slender scissors which he has had especially constructed. Parallel to the first row of stitches, but in front of the scissors, he puts in another row of stitches and after tying them, simply closes the blades of the above mentioned instrument and thus very simply establishes a communication between these two hollow organs. He states that this can be done very quickly and he has performed it twenty-four times on dogs without the least soiling. To further show how nearly impossible it is for anything to escape he did his operation on human intestines filled with water, without losing a drop of the same.

The literature of 1906 was decidedly enriched by the publication of Alfred H. Gould's book, entitled: "The Technique of Operations upon the Intestines and Stomach." (W. B. Saunders & Co.) Of course, space cannot be here devoted to a complete book review, but it is sufficient to state that this work impresses the reviewer as being the best at our command on this subject. No attempt is made to simply repeat every operative procedure, which has been invented up to date, but, on the other hand, only those of proven value are included. This is, however, not all. The book contains the results of Gould's own original experiments which have been carried on for the past three years and is the best illustrated and clearest exposition of this subject which is at our service.

The difficult point of how to treat the stump of the duodenum in pyloric resection after the second Billroth method, is most instructively discussed by Kausch (*Zent. fuer Chir.*, Nr. 5). His authority to discuss

this subject becomes apparent when it is stated that he was the son-in-law and assistant of the late Prof. Mikulicz, who did 184 stomach resections before he died. At the famous Breslau clinic, peritonitis was not uncommonly seen as a result of the stitches in the end of the duodenum giving way. At the same time the circulation in the walls of the remaining portion of the stomach is stated not to have been any too good when the second method was used. The use of gauze packing after such operations only served to make matters worse. The principle of the first Billroth method is, without a doubt, the correct one and our author believes that the operation should thus be carried out whenever it is possible. The second method is to be used only in case the duodenum must be cut off so low as to leave a large portion of it uncovered by peritoneum, and hence useless for purposes of anastomosis.

In writing of cardiospasm, Bruening (*Beit. zur Klin. Chir.*, XLVIII bd., Hft. 2) states that in his opinion the best operation is dilatation of the muscle ring, by means of an instrument introduced through the stomach backward. He reports such a case completely cured after half a year had elapsed. He considers that dilatation from above is accompanied by great danger, and is at the same time uncertain in its effects.

The proposal to do a gastrostomy in certain forms of peritonitis comes from Gauthier and Pinatelle (*Province Med.* Nr. 24 Rev). The idea is to prevent the exhausting vomiting, which accompanies peritonitis, as well as the pressure upon heart and lungs by a greatly dilated stomach. In three cases, this was tried, two patients recovered, and the authors naturally concluded that their operation had something to do with the matter.

GASTRIC ULCER IN GENERAL.—The most exhaustive and valuable article of the whole year on the treatment of gastric and duodenal ulcer appeared in the *Journal of the American Medical Ass'n* for the ninth of September from the pen of W. J. Mayo. At the Mayo clinic, six hundred of these cases had been operated upon prior to the first of May of this year. In writing of perforation Dr. Mayo states that he and his brother, Chas. H. Mayo, have operated upon seven affecting the stomach with two deaths, and nine affecting the duodenum with three deaths. The plan at Rochester is to sew up the opening and then keep the patient in the semi-sitting posture, with a tube in the pelvis. It is of the greatest importance, as he states, that these patients be operated upon as early as possible after the accident occurs, since nearly all die in which treatment is instituted after ten hours. The operation which is recommended for acute recurring hemorrhages is the following: The stomach is opened and the bleeding ulcer sutured well back with catgut, which penetrates all the coats in healthy tissue. Then, on the exterior of the organ, this point is reinforced with a few Lembert stitches. Five patients so treated recovered. Three hundred and eighty-three gastroenterostomies

have been made at St. Mary's Hospital, Rochester, for ulcer, and the Mayos are able to state definitely that this procedure gives most benefit where there is the greatest amount of stagnation. Where there is no mechanical interference, excision of the ulcer is the most logical procedure, especially is this true of lesions situated in the lesser curvature. A partial resection of the stomach also is of the greatest benefit in many of these instances. A further reason for complete removal of the pathologic condition is that cancer may, in this way, be prevented. The Finney operation is used and highly lauded by the Mayos for pyloric spasms, and is stated in this paper to be the one greatest advance since the days of Billroth. It is gratifying to note that 90 per cent of ulcer cases can be cured by proper surgical treatment in the opinion of our distinguished author.

The surgical treatment of gastric ulcer received attention at the hands of V. Eiselsberg (*Mittheil. aus den Grenzgeb. der Med. and Chir.*, Bd. 16) in a lengthy article which deals rather with the subject in the abstract and reports only a few of the author's results. He has had six cases of perforation of which five were in the anterior wall, and states that the only hope for these people is the earliest possible operation. In one of these instances resection of the ulcer-bearing area had been made a year previously, but in spite of this, secondary ulcers had formed. Three of his cases were completely cured. He does not operate for hemorrhage during the time that the patient is bleeding and states that it is exceedingly difficult to find the bleeding point as a rule. It is different, however, after the bleeding has ceased. Then an operation can be done, which contemplates a radical cure of the condition, namely, gastroenterostomy, resection, etc. Gastrolisis has no place in modern surgery and about the same thing can be said of pyloroplasty. (The author surely cannot include the Finney operation in his remarks; however, he is one of the German writers who do not quote American literature, hence, it may be possible that he never heard of it.) He has treated pyloric spasm twice by gastroenterostomy and twelve times by pyloroplasty, considering the former in the light of his small experience to be far the better procedure. The article does not go at all into the technic of the various operations proposed.

One of the most valuable experimental articles which appeared during the year was that by Fibich (*Archiv. fuer Klin. Chir.*, Bd. 79) upon the cause of gastric ulcer, being cured by gastroenterostomy. He made twelve experiments, which were calculated to cause gastric ulcers by excising portions of the mucous membrane within an area from which the blood supply had been cut off by ligation. He was, in this way, successful in producing lesions quite different from those resulting from similar mucous membrane defects with normal blood supply. He found, however, that such an ulcer healed very rapidly after a gastroenterostomy

had been done. In fact, it showed about the same tendency to heal that was exhibited by a mere defect of the kind mentioned in which no gastroenterostomy had been done. In some instances he made a gastroenterostomy at the same time he produced the experimental ulcers, but in others weeks were allowed to elapse before the stomach and gut were united. Simple mechanical drainage was not enough to explain why gastroenterostomy causes these ulcers to heal, since the stomachs upon which he worked were already being properly drained before he produced the ulcer. The article gives proof of a negative sort, however it must be considered of value as at least tending, in a measure, to solve the problem presented.

Fifty-two gastric ulcer patients are reported by Hofmann (*Beit. zur Klin. Chir.*, Bd. 50) as having been operated by v. Hacker. It is stated that blood was vomited in only one-fourth of this number and only very few more ever had blood in the stools. Pyloric stenosis was seen thirty times, and hour-glass stomach in three instances. Fifteen ulcers had perforated either into the abdominal wall, the liver or the pancreas. One can gain an idea of this surgeon's results by the statement that one-third of those last named fifteen patients died, the causes being as follows: One from collapse, one from hemorrhage, one from peritonitis resulting from stomach contents being spilled at the operation, and one from peritonitis because the sutures did not hold. It is astonishing to still read these reports of comparatively few cases from small German clinics and note their antiquated technique and high mortality, observing at the same time that they quote nothing but German literature and thus make no reasonable effort to improve. In the article under discussion no mention is made of an English-speaking surgeon, which is all the more remarkable when we take into consideration that the Mayos, Robson and Moynihan have each had hundreds of cases with an astonishingly low mortality. It is to be hoped that certain German surgeons will some day wake up to the fact that they have long since been out-distanced in this field of surgery, as far as both quantity and quality are concerned.

Gastroenterostomy is still adhered to by W. J. Mayo in his latest paper appearing in the *British Med. Journ.* for November 10, as a routine treatment for ulcer of the duodenum; by simply giving the parts rest, it promises a permanent healing. The posterior no-loop suture anastomosis is now done by Dr. Mayo and referred to elsewhere in these columns as the operation of choice. In a few cases he has excised these ulcers and done this with good results. At Rochester they had done 1112 stomach and duodenal operations when this paper appeared, and in only two instances had primary cancer of the duodenum been seen. The treatment of perforated ulcers in this situation is the same as those in the stomach.

In the *Annals of Surgery* for August, Maclaren had an interesting article upon the treatment of benign obstruction of the pylorus and ulcer

in general. He judges that many ulcers never give pronounced dyspeptic symptoms from the fact that perforations occur in people who have been seemingly healthy. He thinks that gastroenterostomy in acute perforation can only be harmful, and bases his reasoning upon the fact above mentioned, and the further statement that very many acute ulcers recover permanently without surgical treatment. A post-mortem observation of his would tend to show that at least some of the pyloric stenoses in infants are due to a fibrous thickening of the pyloric region. Stress is laid upon the fact that we cannot be too careful in differentiating between ulcer cases and certain of that nervous group of dyspeptics, in which we find examples so closely resembling the first named as to make diagnosis difficult.

A two-hundred page article by Kreuzer (*Beit. zur. Klin. Chir.*, Bd. 49) gives in minutest details the experience of the last seventeen years in the Zuerich clinic in the surgical treatment of gastric ulcer. However, the article in reality covers the same ground as that read by Prof. Koenlein at this year's meeting of the German Surgical Association, hence, the review of this last named article will really suffice for both.

Professor Kroenlein (*Verhandlungen der Deutsch. Gesellsch. fuer Chir.*) having operated upon 112 patients for gastric ulcer presents one of the most interesting and valuable reports which has appeared upon this subject. He is convinced that medical treatment has no effect upon at least one-fourth of these patients, and that about 12 per cent of them die under treatment. On the other hand many of the other three-fourths are cured by a proper surgical operation. Such a procedure has less than 10 per cent mortality, and in his own hands the per cent of those completely cured years later was sixty-one. In addition to this a further 24 per cent were benefited. After an operation his experience has been that a properly drained stomach rapidly recovers from dilation, its secretion becomes normal and when an anatomical examination is made later, the ulcer is found to be transformed into a scar. Even though bile may find its way into the stomach, it apparently does no harm and ceases to do this later on, as a rule. As to the method, which is best, it may be said in general that a posterior gastroenterostomy more nearly fulfills all requirements than does any other single procedure. Excisions of the ulcer should be reserved for rare cases, although it may in certain instances be all that is necessary or be combined with the above-named operation. He does not believe at all in pyloroplasty, and resection is to be practiced only when there is a suspicion of cancer. The author does not operate at all on patients in whom the proper sort of a medical cure has not failed repeatedly, and then the chief disturbances which guide him are stenosis, motor insufficiency and dilation. Of course, small hemorrhages frequently repeated are in themselves enough to warrant an operation, but after a very copious bleeding, it is usually necessary to let the patient recover from the shock before a radical cure can be attempted.

An article by Brenner (*Archiv. fuer Klin. Chir.*, Bd. 87) entitled: "Gastroenterostomy or Resection for Callous Ulcer," must be taken seriously as going one step toward clearing up a much disputed question. Especial interest attaches to his report of three cases, in which he was able to prove at second operations that a gastroenterostomy can completely relieve, not only the symptoms, but the anatomical condition of callous ulcers. He admits, however, that many cases have been reported in which after so radical an operation as resection of the ulcer area, a second ulcer formed and the patient bled to death in consequence. He did twenty-one resections for the lesion under discussion with 28 per cent mortality, and thirty gastroenterostomies with 13 per cent mortality. His percentage of cures was about the same for each of these two forms of operation, hence, he concludes that it is better surgery to employ the one which has decidedly the lower mortality, namely, gastroenterostomy.

An interesting and well thought-out contribution to the treatment of non-malignant diseases of the stomach comes from the pen of Gelpeke (*Archiv. fuer Klin. Chir.*, Bd. 80, Hft. 4.) He begins by stating that the mortality of gastroenterostomy under such circumstances is about 10 per cent. Then he mentions the fact that a large number of these operations are not ultimately successful on account of shrinkage, adhesions and other postoperative changes. On the other hand he considers pyloroplasty to be at least theoretically ideal and supports his position by stating that the mortality is less than in gastroenterostomy, while no functional bad result, such as vicious circle is possible. Of course, he does not advise this last named operation when there is any thought, or even any possibility of cancer. In such cases a resection is to be done by all means. In a certain number of cases he has added gastropexy to pyloroplasty and with the happiest results. His technique contemplates attachment of the middle of the anterior wall to the cartilage of the lowest rib. He says that this has no ill effect upon the activity of the stomach and considers it fully as much indicated for a displaced stomach as nephropexy can be indicated by displacement of the kidney. It is easier to do and there is great certainty of a permanent good result.

A case which required a more than usually extensive operation for gastric ulcer was reported by Jaeger (*Med. korres. des Wuertenb. aerztl. Landesverb.*, Nr. 49, Rev.) The ulcer had perforated into the anterior abdominal wall, a considerable portion of which had to be removed when a resection of the stomach was performed. The patient got perfectly well and it is interesting to relate had no hernia, although a section, half as large as a saucer, had been removed, including a portion of the rectus muscle.

The treatment of gastric ulcer receives an impetus in reading the results published by Mueller (*Inaug. Diss. Rostock*, Rev.), who reports forty-nine cases operated upon. Out of thirty-seven patients, whose histories could be traced, only three failed to be greatly improved.

It has long been known that gastric ulcers may be single or multiple, but a case reported by Ahrens (*Med. korrespondenzbl. d. Wuerttemberg. aerztl. Landesvereins*, May 26, Rev.) is almost without a precedent. There were eight or ten within a space as large as a saucer, one of them having perforated into the liver substance. This patient recovered, however, after a gastroenterostomy.

Moynihan, whose many contributions to gastric surgery have decidedly enriched the subject, reports (*Mitteilungen aus den Grenzgebieten der Medizin und Chir.*, Bd. XVI, Hft. I) twenty-three cases of hour-glass stomach operated upon. Four of the patients died, but the others were completely cured. In only seven did he do a gastroenterostomy, the rest being some sort of plastic operation on the stomach itself. He is not at all convinced that such a condition is ever congenital, the facts seeming to indicate that some form of ulcer is most usually at fault. One of these twenty-three stomachs had two constrictions in it, and was consequently divided into three separate sacs. In another, three constrictions were found.

An interesting case is presented by Koenig in the *Deutsch. Med. Wochen*, Nr. 33. He operated upon a patient in whom the diagnosis of gastric ulcer had been made, and found a new mass almost as large as the palm of the hand, seated like a saddle upon the lesser curvature. In the middle was a deep crater, and a gastroenterostomy was done; of course, excision was impossible. A few months later, the same patient was operated upon for secondary hernia, when to the surgeon's astonishment the tumor was found to have completely disappeared, there being only a few faint adhesions to mark the spot where it had been.

Another case in which a supposed malignant tumor of the stomach disappeared after gastroenterostomy is reported by Wallis (*British Medical Journal*, July 14). At the first operation he made up his mind to resect later, after discovering a large tumor of the pylorus and lesser curvature. However, when he opened the abdomen a month later, he found absolutely nothing but a sharply outlined ulcer marking the spot.

One of the valuable articles of the year is that of Kramer (*Beit. zur Klin. Chir.*, L. 1, Bd., 2 Hft.) in which he details the recent experiences of the Heidelberg clinic in the treatment of benign stenosis of the pylorus. This material consists of 139 cases, a number which is certainly sufficient to warrant conclusions that may prove instructive, and the author's chief lessons in the article are with regard to the lasting condition of the new opening and of the resulting gastric functions. He saw, after a number of operations, large inflammatory tumors completely disappear, but in 120 cases, 11 secondary operations had to be performed on account of renewed stomach symptoms. One of his patients bled to death twenty-five days after the operation. At the autopsy, a large open vessel was found in the base of the ulcer, which had caused all the trouble.

"Ulcer and cancer of the stomach; their Relationship," is the title of an article which appeared in the *Journal of the Minnesota State Medical Ass'n* on June 1st. It is from the pen of Christopher Graham, physician to St. Mary's Hospital at Rochester, Minn., and by reason of this fact, as well as for its intrinsic value, must be treated at length. The author's conclusions are that the very great majority of ulcers of the stomach are located at the pyloric end. The immediate pylorus comes first, the lesser curvature second. A small per cent is found elsewhere, few at the cardia. That the great percentage of cancers of the stomach are found at the pylorus and lesser curvature (pyloric end), that is, the same locations finds the greatest number of each. That quite a percentage (50-60) of patients suffering from carcinoma give three or more years of pre-cancerous history. That a growing percentage of cancer cases is found with short histories and ulcer demonstrated as the earlier lesion. That there is a percentage, if small, of short ulcer histories leading to acute pyloric obstruction where the ulcer must have been present for quite a period, and latent. That ulcers may be present for an indefinite period and no symptoms follow until obstruction, perforation, and hemorrhage appear, if the acidity is low or absent, and the ulcer locates itself along the lesser curvature or near the pylorus. That cancers may develop under the same gastric conditions and manifest themselves only when obstruction or systemic poisoning makes itself felt.

Gastric ulcer and cancer were treated of in the *Boston Med. and Surgical Journ.* for August 23d by Graham in the well-known way which characterizes everything that emanates from the clinic at Rochester. In ulcer, four stages are mentioned, and in the third or fourth, cancer may be expected to develop, if at all. The good appetite which may be present in the first stage usually grows less in the others, or, if present at all, the patient dares not eat to save himself distress. Loss of weight now takes place, while, indeed, just the reverse may be noted in the first or second stage. Ulcer is given as a direct cause of cancer in more than three-fourths of the stomachs which have been removed at Rochester, and this should go far to convince us to a radical treatment of gastric ulcer where discovered early.

PERFORATION.—It is encouraging to note that during 1906 several patients were successfully operated upon for perforation of stomach and duodenal ulcers. Two of these by Blecher (*Deutsch. Militaer Zeitschrift*, Hft. 3, Rev.) are reports of cases in which the opening was sewn up and the patients promptly recovered. One was in each of the viscera mentioned. In one, a stomach fistula remained sometime, but closed spontaneously. Both of the patients had seemed perfectly well up to the time of the accident, which makes the matter all the more interesting.

An article by Miles on perforated gastric and duodenal ulcer is of more than ordinary value. He had a personal experience with forty-six oper-

ated cases, and states that the trouble is usually on the anterior wall. One point must be borne in mind that the well-known initial symptoms subside very rapidly, so that a timely operation may be neglected in consequence. After sewing up the opening he does not put in a local drain, but places a tube in the pelvis and maintains the American or Fowler position. Of the greatest importance is the following: Only 18 per cent of these patients died when the operation was done within the first twelve hours, but on the other hand forty-four to ninety-two per cent died where this was undertaken after that.

An article by Noetzel (*Beit. zur Klin. Chir.*, L. I bd., Hft. 2) founded upon an experience of sixteen cases, dwells exhaustively on the subject of operation for perforated gastric ulcer. The author, as an assistant of Prof. Rehn, at Frankfort, and in such a well-known school, naturally came in contact with the best methods. Five of his patients were operated upon within ten hours, and only one of this number died. Only one lived, however, when the operation was done twenty-four hours after the accident, and none of those got well who were operated upon on the third day. None of the perforations were on the posterior wall, which is a fortunate thing, as far as surgical treatment is concerned. In half of the cases only was it possible to make a correct diagnosis in advance, and it may be stated in passing that this can be done only by eliciting most carefully the patient's past history. However, the author very correctly states that the necessity of operation in general is here much more important than the matter of diagnosis alone. He considers two points of supreme importance in operating; the first of these is to close up the opening in the stomach, and the second is to take care of the infection, which has already spread into the peritoneum. It is not enough to simply suture up the opening, but far better, where feasible, to excise the ulcer. Furthermore, a gastroenterostomy is to be added if there is any stricture of the pylorus, and the patient is in condition to stand it. The author drains with gauze down to the suture line and then places tubes in the pelvis in the American manner. It is very evident that the chief point, with regard to operative success, must always be the time which lapses between the perforation and the operation.

Cases, in which gastric ulcers perforated, were reported by Milko (*Budapesti Orvosi ujsag*, 1906, No. 3, Rev.), and these teach the same important lesson that an operation must be done early, that is, within the first few hours, if it is to be successful. In one case, he did a gastroenterostomy at the original operation, which was performed three hours after perforation and with complete success. Later, however, union had to be made between the two limbs of gut, on account of vicious circle.

Three cases were reported by Renton in the *Glasgow Med. Journal* for September, in which gastric ulcers ruptured and in all three, the patients' lives were saved by a very timely surgical operation. It is worthy of note

that this surgeon saved all three of his cases, something which could not possibly have been done had the operations not been undertaken relatively early.

An interesting case of rupture of the stomach with diaphragmatic hernia is related by Dexenberger (*Muench. Med. Wochen.*, Nr. 7). His patient suffered this accident in consequence of violent vomiting after overloading the stomach. He had suffered years before from an ulcer of the stomach, which had resulted in partial closure of the pylorus. In consequence of this the organ was thinned out in this region so that it did not take as much force as might have been expected to burst it. The gastric contents emptied itself into the left pleura, and the patient died almost at once.

One naturally supposes that a large hole in the stomach is bound to let the contents of that viscus out into the abdominal cavity, but a case was recently observed by Haim (*Wiener Klin. Wochen.*, 1905, Nr. 47), in which the escape of food was avoided in an unique way. A young man stabbed himself in the stomach and when operated upon was found to have an immense blood clot completely blocking the opening in the above mentioned viscus. The wound was sutured and the patient made an uninterrupted recovery.

A most unusual case is reported by Chutro (*Revue de Soc. Med. Argentina*, Nr. 73, Rev.), who reports an instance in which a child was kicked in the left side of the abdomen by a horse. The little one vomited for five days when the mother commenced to notice a new mass forming at the sight of injury. The abdomen was opened and in the wall of the stomach, between the mucous membrane and the muscle, was found a new formed cavity of considerable size, which contained a yellowish green fluid. This was drained and the patient got well without further incident.

GASTRIC FISTULA.—In the *Revue de Chir.*, Nr. 7, appeared a valuable article by Patel and Leriche on gastric fistula following ulcer. This is a rare lesion. Seven cases are reported, two of them from the clinic at Lyons, with which these two gentlemen are connected. Such a fistula is rare because to produce it an ulcer must be on the anterior surface of the stomach and be the site of dense adhesions, both of which conditions are rather uncommonly met with. The symptoms are of two kinds, the first premonitory, and the second directly those of the fistula itself. As far as diagnosis is concerned, these are divided theoretically in two parts, the first locating the source of the fistula, and the second, its cause. The treatment is to be divided into two kinds, inasmuch as the ulcer is situated high or low in the stomach. A gastroenterostomy may possibly cure such a lesion, when situated high up, but this is doubtful, and for those low down the only procedure which can hope to be effective is direct attack, namely, excision with suture of the stomach wall and abdominal wall separately.

Spontaneous fistula from the stomach through the abdominal wall is the title of an article by Kuzmik (*Beit. zur. Klin. Chir.*, Bd. 48), in which he reports a case which is said to be most unusual in the literature. His patient was a syphilitic woman, in whose left epigastrium a gradual increasing swelling was noticed. In a short time severe pain made its appearance in this region, and a little later a spontaneous opening took place through which stomach contents emptied itself in large quantities. After treating the skin for a time with zinc oxide, it improved to such an extent that an operation was undertaken for closure of the new canal. The stomach was sewn up after excision of the ulcer and then the abdominal wall closed. The patient made an uninterrupted recovery. The case is regarded by the author as being, without a doubt, syphilitic in origin.

Kaufmann (*Mitteil. aus den Grenzgeb. der Med. and Chir.*, Bd. 15) reports an unusual case in which a peptic ulcer appeared in the gut after gastroenterostomy, this being accompanied by the formation of a fistula between the stomach and colon. At the second operation, the gastroenterostomy opening was found to have closed completely. This operation had been done for gastric ulcer and for two years the patient got along as well as could be desired, gaining twenty-five pounds in weight. Then pain commenced once more in the abdomen, from which time it is supposed the jejunal ulcer commenced. A year later he complained of belching up gases, which had a fecal odor, and upon the stomach being washed out, feces were determined. Nevertheless, stomach contents did not stagnate at all, but passed out of the organ about as they should normally do, nor was it possible to determine that this material passed directly into the colon. However, colored material injected into the rectum very rapidly made its appearance in the stomach, hence, another operation was undertaken to repair the damage, the condition being found as above described. Naturally a most extensive stomach and intestinal operation was involved, however, the patient did well for six days, when he suddenly collapsed, and upon opening the abdomen, it was found that an anastomosis between the ascending and descending colon had given way; the result was death in a few hours.

A fistula between the stomach and bronchus is reported by Loeb (*Muench. Med. Wochen.*, Nr. 5). There has been ten of these cases described up to date. In the one under consideration, no cause is known definitely, and strange to relate, the patient suffered from it for about twelve years before coming into the author's hands. An attack of coughing would usually produce stomach contents. It was proven to be the case by staining the same with methylene blue. It is supposed that a gastric ulcer furnished the basis on which the trouble developed.

A harrowing recital by Perutz (*Med. Klinik*, Nr. 3, Rev.) describes the symptoms which may be expected in a case in which there is a path-

ological communication between the stomach and the colon. His patient had watery stools immediately after washing out the stomach. At the autopsy it was not long until the condition was readily explained by the finding of above mentioned.

An article which appeared in the *Beit. zur. Klin. Chir.*, Bd. 51, from the pen of Prof. V. Hacker is of unusual interest since it details the history of a patient who was alive and well more than five years after being fed exclusively through a stomach fistula. In 1900 this woman drank concentrated lye with a resulting stricture of the esophagus. This soon grew so tight that a stomach fistula had to be made and then after she was dismissed from the hospital, her family physician, in attempting to dilate the scar, succeeded in perforating the tube. She was returned to the clinic and saved by a most extensive operation, although at the time there was an extensive plegmon in the mediastinum. After this she was content to take all her food through the fistula, chewing it herself and then pouring it into the stomach with a funnel. She was seen for the last time almost six years after the original operation and found to be weighing about thirty pounds more than when first seen. This report is especially interesting in view of the unsatisfactory results, both local and general, which have followed the use of the gastric fistula in the hands of many surgeons. No irritation of the skin appeared at any time in this case.

OTHER COMPLICATIONS OF OPERATION OR DISEASE.—One of the interesting complications of gastric ulcer was reported by Tileston in the *American Journal of Medical Sciences* for August. He reported three cases in which secondary ulcers were found in the esophagus. In one of these, perforation took place and the individual died. In another the parent gastric ulcer perforated with a similar result, while the third was simply an accidental post-mortem finding.

A rather unusual experience was reported by Quenu (*Bull. et Mem. de la Soc. de Chir. de Paris*, Nr. 27), in which, after resection of almost the entire stomach, he found at autopsy undertaken months later, the lower portion of the esophagus to present a most unusual appearance. It was dilated until its circumference measured 10 cm. at some points, and the wall was about 14 mm. thick. The operation had been undertaken for cancer of the pyloric region, the patient made an uninterrupted recovery and died later of recurrence. The interesting feature presented by this patient was that she wanted to eat almost constantly, and in fact did so, although she had practically no stomach left.

Burke reported a very unusual postoperative complication of gastro-enterostomy in the April number of the *Buffalo Medical Journal*. This was the posterior operation, with additional enteroenterostomy. His patient remained perfectly well for four months and then commenced to vomit. At a second operation both of the new openings were found in

very much the same condition as at first, as far as outward appearances went, all the trouble having been caused by a band of mesocolon occluding the afferent loop. On closer examination it was not possible to introduce a finger into the gastroenterostomy opening, which had to be enlarged. The patient is now perfectly well.

Another of the interesting postoperative conditions recently mentioned is the formation of ulcer in the gastroenterostomy wound, an occurrence which has not been frequently noted by our authors. Cancer has not been found at Heidelberg to form often upon the base of an ulcer left behind. This observation is interesting, in view of the fact that it does not coincide with that of many other competent observers. In five cases, a secondary operation was necessary because the gastroenterostomy opening had shrunk too small to be of any use. This is remarkable, in view of the fact that the Murphy button was used in almost all of these patients. Thirty-five cases were examined after operation, and in twenty the motility of the stomach was perfect, and in only three of them was it enough interfered with to cause serious symptoms. The chemical examination of the stomach contents from these patients presents many interesting points, although a review of the same would lead us too far.

The important matter of intestinal disturbances, which occur after stomach operations, was considered at length by Anschuetz (*Mitteil. aus den Grenzgeb. d. Medizin.*, Bd. XV., Hft. 3, 4). He observed the most persistent diarrhea after gastroenterostomy, though the anastomosis was made not more than 50 cm. distance from the point where the gut begins. This occurred seven times in cancer cases, commencing from six to ten days after the operation, and four of the patients died in consequence. It is possible here, he states, that a mistake may have been made in choosing the loop of bowel, which was united with the stomach, so that almost all of the small gut was thrown out of function. It is interesting to state that in some of these patients a second operation, where careful selection of a high gut was made, turned out successfully.

The relation of dilatation of the duodenum to gastric disturbances was commented upon by Finney before the Johns Hopkins Medical Society (*Johns Hopkins Hospital Bulletin*).

Five or six years ago, upon opening the abdomen, a condition was found which was not mentioned in the literature, i. e., a dilatation of the duodenum with a patent condition of the pylorus. The patients had a history of indigestion for months or years, of nausea and vomiting, and symptoms that were indefinite but distressing. In all the cases there was Glenard's disease. Nothing that was done seemed to relieve the symptoms. The nearest to a description of the condition was a paper read by A. J. Ochsner in San Francisco, in which he reports fourteen cases. Four years ago, after an operation for gall-stones, a patient began to vomit,

and vomited until she died. At autopsy there was found a dilated stomach and dilated duodenum, but no lesion could be found. The duodenum passes behind the superior mesenteric vessels, the superior mesentery itself running down to the right iliac fossa. When the stomach is much dilated, filled with fluid, and has descended to the pelvis, there is a dragging on the mesentery and vessels. This is apparently the obstruction. To the proximal side the intestine is dilated, and at the distal side it is collapsed. Glenard also suggests that dragging on the mesentery might obstruct the duodenum. The explanation is not satisfactory for the condition. The dilatation is the effect, not the cause, though it may be both. Two cases have been reported after operations other than abdominal, one being a breast removal and the other an operation on the elbow. Schnitzler suggests that it takes place after anesthesia, particularly after chloroform.

One of the unique stomach cases of the year was reported by Mumford in the *Annals of Surgery* for January. He had done a gastroenterostomy for ulcer, with a result that was perfectly satisfactory, as far as improved conditions were concerned. However, on the fifth day there was sudden terrible pain with collapse, and the patient died ten hours later. At the autopsy a rent was found in the fundus of the stomach, which had returned to its normal size as in consequence of perfect drainage. It was this return to the normal which had caused all the trouble, since by so doing the afferent loop of bowel had been put upon a stretch, with the consequence mentioned above.

This case presented the anomaly that the ligament of Treitz was decidedly to the right of the spinal column. It is, no doubt, to be attributed partly to this fact that the unfortunate accident occurred.

Gosset (*Revue de Chir.*, XXVI, Nr. 1 and 2) writes most instructively of peptic ulcer in the jejunum after gastroenterostomy. He collected thirty-one cases, ten of which ended fatally. Half of these resulted from the anterior operation. The only suggestion which he is able to make as a result of his studies, looking toward the avoidness of this accident, is that some sort of plastic operation on the pylorus should be done where possible, instead of the gastroenterostomy.

Acute postoperative dilation of the stomach was seen by Halstead (*Surgery Gynaecology and Obstetrics*, Bd. II., 13) after fixation of the kidney. This resulted in death five days later and the stomach was so distended that at the post-mortem it was found to fill out almost the entire abdomen. The upper part of the duodenum was also greatly dilated. The article goes very deeply into the subject and is most interesting, it being stated that such cases have been observed after injuries to the brain and spinal column, and in Halstead's case there is no question as to a mechanical obstruction.

A most valuable contribution was given to the little-understood subject of gastromesenteric ileus by Finney (*Boston Med. and Surgical*

Journ., Aug. 2nd) who had a case in which pyloroplasty was done for gastric ulcer, with the result that the patient vomited until she died a few days later. The autopsy showed a partial obstruction of the duodenum and stomach, due to pressure by the mesenteric artery where it crosses the gut. He does not claim that this is the only cause of acute dilatation of the stomach, but states that such must very frequently be the case. A complete resume of the literature on this subject is given, and the article is beautifully illustrated by drawings from the autopsy in this case. The causes of the condition in general seem to be indiscretions in diet, enteroptosis, surgical operations, narcosis, etc. The symptoms are chiefly vomiting of large quantities, light colored at first, but growing darker toward the end, this continuing until the patient is exhausted and dies. In the treatment the position of the patient is of the greatest importance. He should not lie on the back, but upon the right side of abdomen with the hips elevated. Manual replacement of the viscera which by their low position are dragging upon the vessel in question should be carried out if necessary. Gastroenterostomy has saved such a case, although the condition has followed this operation. Washing of the stomach may be of value if carried out early enough.

Michaelis (*Muench. Med. Wochen.*, Nr. 18) relates the history of a patient who suffered from tetany and coma, which existed for a week after the pylorus became completely closed by a cancerous growth. However, after a gastroenterostomy was performed, the symptoms disappeared and later still a resection of the diseased portion was performed.

Gastric tetany is caused, according to Jonnesco and Grossman (*Presse Med.*, 1905, Nr. 52, Rev.) by a substance which is formed in the contents of stomachs in which there is stagnation; experiments of a very interesting kind led them to this conclusion. They injected the stomach contents of a man who was later cured by gastroenterostomy into animals and succeeded in producing tetany in them. This condition presupposed a lack of fluid in the system and is, as might be supposed, successfully treated by saline injections.

Quenu reported in the (*Bull. et Mem. de la Soc. de Chir. de Paris*, Nr. 24) a case in which stenosis of the pylorus followed the swallowing of hydrochloric acid. This patient was a farmer who mistook a bottle of hydrochloric acid for liquor and did not notice the difference until he had swallowed a portion of it. He commenced to vomit at once and drank a large amount of water in order to dilute the poison. However, vomiting kept up right from the first and he remained several weeks in bed, losing about forty pounds in weight and growing correspondingly weak on account of the fact that little or no nourishment was absorbed. An operation for the relief of his condition was attempted, but he died from the anesthetic and at the autopsy the condition above noted was determined.

CANCER AND OTHER NEOPLASMS.—The most important article which appeared during the year 1906 as far as cancer of the stomach is concerned, is from the pen of W. J. Mayo, *Journ. American Med. Ass'n.*, and details the results which he and his brother, Chas. H., attained in one hundred resections. It is stated that 30 per cent of all cancers occur in the stomach, and the reason that cancer in this situation has not more often been treated radically is that the mortality in early days was extremely high, and further because it is often difficult to make an early diagnosis. The mortality at Rochester has been only 14 per cent, which is in striking contrast with the figures of earlier writers. The Billroth No. 2 is probably the operation which meets the requirements of the greatest number of cases. However, the Kocher procedure is more nearly anatomic, and where it can be used should have the preference. The Mayos had twenty-five consecutive cases with only one death, which is truly a record to be proud of. They found that more than half of their stomach cancers developed in old ulcers, a matter which must attract the attention of surgeons to a new importance attaching to the treatment of ulcer. A radical operation gives more than three times as long life tenure as does a gastroenterostomy, even when recurrence takes place. Only 26 per cent of the 313 cancer cases operated upon by the Mayos were early enough to permit a radical operation. The technique, which Dr. Mayo gives in all its details, must be studied in the original in order to be thoroughly grasped; however, one can never gain an adequate impression of the masterful resection done at Rochester unless he has seen it with his own eyes.

An article on stomach surgery by Robson is always of more than passing interest. Hence, his statements on operative treatment of cancer, published in the *Lancet* for August 18th, must be taken with more than passing notice. He is more than ever positive that an explorative section is alone able to clear up many cases at a time, when an operation can be of permanent benefit. In cases where a radical operation was impossible, he has had only 3.3 per cent. mortality in gastroenterostomy. This statement is astonishing, when taken in conjunction with writings of many continental surgeons, among whom Krause lost 48 per cent of those whom he treated thus. Resection should give as good results here, under similar circumstances, as have the operations for cancer of the breast, uterus, etc., in the opinion of Robson. The mortality of such an operation in his hands has only been about 14 per cent.

The well-known English surgeon, Moynihan, reviews in the *British Medical Journal*, of February 17th, the patients on whom he operated for cancer of the stomach during the eight years prior to 1906. There were sixty-seven of these, and gastroenterostomy was done forty-one times, the new growth being resected in all of the other instances. He advises that this latter operation be made a routine procedure wherever there

is any question as to a choice between the two methods. Twice he had astonishing temporary results, simply from explorative operations. In three cases he mistook an inflammatory mass for cancer and states in closing that cancer developed upon a pre-existing ulcer in about half of his patients.

In the *Deutsch. Zeit. fuer. Chir.*, Bd. LXXX, Bruening presents an extensive article on the question of resection for cancer. The operation as done by his Chef Popert does not differ in any particular from the second Billroth method, as performed extensively elsewhere. It is interesting, however, to note that he drains the upper abdomen with gauze and tubes, and for the first few days after the operation washes out the cavity. With this treatment, or rather in spite of it, his results have been remarkably good, only six out of thirty-two patients dying from the operation. He has, however, no case in which a permanent result can be claimed. The motor function of the remainder of the stomach has been found to be almost normal in every case examined.

An unusually extensive operation for cancer is reported by Childe (*British Medical Journal*, Jan. 27). In this instance two-thirds of the stomach, the anterior face of the pancreas, and the transverse colon were removed. In spite of this most extensive procedure, the patient recovered from the operation, although the author does not give much hopes for a radical cure.

Fuchs reports a primary sarcoma of the stomach (*Virchow's Archiv.*, Bd. CLXXXIII). The disease ran a course similar to that of cancer in every particular. The tumor was located in the greater curvature, and at the autopsy an immense number of secondary deposits were found. The growth had its origin in the sub-mucous layer of the stomach.

An unusual stomach tumor was reported by Delore and Leriche (*Bull. Med.*, 1905, p. 794, Rev.), this being a malignant leiomyoma. The patient presented at the operation about the same symptoms which one would expect from a cancer. A resection was done with good result. In fact, the patient was still well when seen after the lapse of two years. Certainly, it is uncommon to see stomach tumors composed of smooth muscle fibres. The tumor is described as malignant for the reason that it had invaded various layers of the stomach wall.

Sarcoma and myoma of the stomach are exhaustively treated by Yates in the *Annals of Surgery* for October. He observed several such cases while an assistant of Ochsner and writes most interestingly of the same. Sarcoma is so rare that it has not received its due amount of attention. However, one can think it may not be really as rare as we have supposed, in consideration of the fact that almost all stomach tumors are at once called cancers. Three of these cases were operated upon in nine months by Dr. Ochsner. Only 9 per cent. of such tumors produced pyloric obstruction, and, of course, there is no pre-existing ulcer history, this lat-

ter being urged very rightly by the author as a point of diagnostic value. The prognosis seems to be better in sarcoma than in cancer, since the growth is slower and secondary deposits occur later.

A somewhat unusual stomach case is reported by v. Haberer (*Mitteil. aus den Grenzgeb. der Med. & Chir.*, Bd. 16). His patient had presented symptoms of both stomach and intestinal obstruction. The abdomen was opened and a tumor found in the small intestine with glands in the mesentery, also another at the pylorus. In order to short-circuit both of these obstructions, a gastroenterostomy was done, together with an enteroenterostomy between the resulting limbs of gut and in consequence the patient did perfectly well for some months. She returned to the clinic, however, with bile vomiting and the abdomen was opened a second time and the afferent loop of bowel cut in two between the two anastomoses, the gut tumor being removed as a part of this procedure. There were no further symptoms up to the time the article was written. Microscopical examination revealed the fact that this mass, which had been taken for tuberculous, was in reality a sarcoma.

Sheldon reports later details in the November issue of *Annals of Surgery* concerning a case of cirrhosis of the stomach upon which he operated three years ago. It may be remembered by some that the patient's stomach was very thick and contracted at the time of the operation, a condition which has usually been associated with diffuse cancer. However, since gastroenterostomy was done, the patient has remained well and at work for three years, hence, the author seems justified in the claim that this was a benign condition. This makes the eleventh case of its kind in the literature.

In two cases observed by Pinatelle and Cavaillon (*Province Med.*, Nr. 15) secondary tumor growths were found in the dura and the skull after cancer of the pylorus. These observations are especially noteworthy, in view of the fact that such a finding is exceedingly rare.

GASTROPTOSIS.—Eve gives an account in the *British Medical Journal* of April 7th, of five cases treated surgically for gastroptosis. In all of these, internal treatment had practically been of no use. His operation consisted of sewing with silk the lesser curvature to the liver and the greater curvature to the anterior abdominal wall. These cases were examined from one to two and one-half years after operation and all of them were found to have been greatly benefited.

The surgical treatment of gastroptosis received attention at the hands of Beyea in the November number of the *Journal of the Medical Society of New Jersey*. His plan is to shorten the suspensory ligaments of the stomach and in this way prevent kinking at the pylorus, a cause apparently of stagnation. He has done the operation eight times with seven results which are perfect in every particular, some of them years old. The uncured patient was a pronounced neurasthenic when she came to him,

hence, he does not feel at all discouraged by this one experience. He is convinced that this plan should be tried in every case which resists a properly conducted medical treatment, excepting those where there is general splanchnoptosis. X-ray experiments have determined for him that an abdominal binder has no influence in keeping the stomach in its proper position.

INFANTILE PYLORIC STENOSIS.—In the April number of the *Glasgow Medical Journal* there appeared rather an unusual article by Nicoll relating his experience in a large number of cases with the treatment of congenital obstruction of the pylorus. In some of these children he simply dilated the outlet with good results. In others he did a pyloroplasty and of six so treated lost only one through shock. Their ages varied from three weeks to five months. He does not recommend gastroenterostomy in these cases, because usually children cannot stand it, the mortality being above 50 per cent.

Another excellent article on stenosis of the pylorus in infants appeared in the *Annals of Surgery* last July from the pen of Fisk. He states that the dilatation of the organ is usually marked on the abdominal wall and that a hard mass can often be felt at the pylorus. The circular muscle fibers in this vicinity are greatly thickened and frequently the smallest sound can hardly be introduced. He does not believe that spasm of the pylorus is responsible for this condition, but regards it rather as being congenital. He collected seventy-one cases from the literature, which had been operated upon. Of these 53.5 per cent ended favorably. He is in favor of pyloroplasty as the operation of choice.

Stenosis of the pylorus in infancy was completely reviewed by Scudder before the Johns Hopkins Medical Society (*Johns Hopkins Hospital Bulletin*, January). He had had two such cases of his own, one patient being fourteen days old, and the other twenty-four. Both babies were saved, it is gratifying to note.

If any one single lesson of more import than the others, is to be drawn from the work of 1906 in this line, it is that early diagnosis is the all-important matter. In many instances this is not to be attained without an explorative operation. The sooner we convince ourselves of the value and harmlessness of this procedure, the sooner will stomach surgery come into the full usefulness which it is intended to enjoy.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OFCARL FISCH, M. D.

As the object of these yearly comments on the work and progress of pathology and bacteriology cannot be a detailed review of the single additions to our knowledge, like in former years the writer's attempt must be in a selective way to deal with problems that, not only in themselves of the highest importance, represent in the work done on them a picture of the trend that research in those branches of natural science has taken during the last year. The detail work has again been of immense extent, more influenced than before by the principles of chemical, physical and general biologic teachings. Pathology and, naturally, bacteriology, begin to lose their systematic character and arrange themselves among the series of branches of science that build up their structure on the basis of experimentation. Morphologic conditions are more and more made the object for orientation and only the starting point for a more intimate understanding of pathologic conditions and processes, to be studied by experimental methods. The idea that pathologic changes, microscopically demonstrated, explain the nature of a pathologic process, the belief that the interpretation of a gross or microscopical picture gives us the total of the nature of the disease studied, has been acknowledged to be illogic and one-sided, as the findings always show only the effect but not the inner stimuli and reactions that lead to it. Description of pathologic structures, and that has for a long time been the task of pathologic anatomy, never can be an explanation, unless the way in which they were brought about can be entirely elucidated. As an instance, the frequent impossibility of microscopically differentiating tuberculous from specific lesions can be mentioned. The section of a diseased tissue gives us a stated condition, that empirically is connected with a disease or change leading to it. In many cases, up to date, the causative relation of the changes to a pathologic process is a conclusion of the character of the *post hoc, propter hoc*. Experimental and physiologic pathology are beginning to throw light on these questions; biologic investigations have already commenced to change our views of the intrinsic nature of many infectious or constitutional diseases. The work done in this direction is enormous, but, looked at from the point of view whether a definite basis has been established, seems as yet rather unsatisfactory. The great question of the functional relation to the morphologic appearances of living tissue has not been answered, although many workers, following different lines of study, have conclusively shown that we can hope, by continuous attempts, to solve the riddle. All this is said

to indicate that modern pathology has lost the confidence that it, after its old methods, can scientifically account for the nature of processes of disease, and that an endless effort is necessary to make them understood. In these endeavors, the separation between normal and pathologic conditions disappear, the field is made extensively larger, and thereby more promising.

Even fundamental conceptions on which our whole morphologic and partly physiologic or biologic thoughts are built up, are likely to undergo a revolutionary alteration. This concerns mainly the cell-theory, the teaching that a multicellular organism is built up by or is a composite of a great number of individual fractions, each of them endowed with specific qualities, and in their complex aggregation and interrelation forming the multicellular plant or animal. There is no doubt that the establishment of the cell as a unit, dating back to Schleiden, is one of the greatest achievements of the last century. On it is based all of our deeper knowledge of the life of protoplasm, of life. Our teachings on the function of life are derived from the study of cells, our principal physiologic and biologic and pathologic acquirements are founded on it. The cell, today, reigns supreme as the primary factor in life and death. Its definiteness and easy reach made it a welcome object of a study of the qualities and functions of the whole, of which it was an integral part, participating of all of its primary qualities and therefore representing a true microscopical representation of the complex. Its study is within the limits of our mechanical appliances, while that of the whole, as far as the primary factors of life are concerned, is out of our reach. An organism is composed of cells, and their study will reveal some of the mysteries of life of the organism as a whole. The view is that a multicellular organism is a state of cells, each of them essentially alike, and only differing from each other in the services they render to the state, the organism, thus composing an entity of positive and constant character and life. The sharp demarkation of the individual cells from each other in most cases, the power possessed by the single, isolated cell, to reproduce the whole organism by simple cell-division (very frequent in plants, as mosses, etc.), the exact study of the multifarious physiologic functions of a cell, all led to the opinion that they formed the fundamental elements of an organism, that in the cellular structure we have to look for the possibility of existence of multicellular animals and plants. In other words, cells were, and are today, and will be for a long time, the basis of every study of structure, function and life. This study has furnished us knowledge of an extensity not to be excelled. Though, however, their source of information was not, by far, exhausted, as yet, certain observations and researches revealed conditions that spoke against individuality of the cells; for certain tissues the continuity of the cells composing it was demonstrated and observations in this direction mul-

tively each year. Plants are known, large and imposing in differentiation into roots, stem, branches and leaves, consisting only of a uniform protoplasmic mass, with a resistant cellulose skin and providing for its mechanical needs a system of rafters and beams, that serve the claims for support and form. Only when the process of multiplication obtains, cellular masses are separated off from the mother-plant, in some of these plants sexual in character, that lead to the preservation of the species. Aside from the question that future investigation may directly show that all cells of an organism are a continuous mass, that we have not to deal with individual cells, but with portions of an organism, differentiated for certain purposes to cells which exhibit their character as portions of a whole by their transition, the one into the other, there are other points to be considered.

A multicellular organism arises from one cell, formed by the union of two cells. From this cell, under normal conditions, the complex organism is built up, constant in form, function and other qualities. The study of the development of lower animals shows that, in the beginning, the division of the egg-cell produces cells of the same type; further on, differentiation begins with the growth of the young organism, indicated only at first, but growing more and more complex with the development. The point to be emphasized is that in an egg-cell a polarity exists, which forces the single cells to arrange themselves in a definite way. This is, of course, only a name, for a quality that we know exists, but cannot explain. The quality exists and pertains to all of the cells formed by the division of the egg. This is well known from many experiments, where the first division cells were separated, and where each of them began to develop a typical embryo. There must, therefore, be, in the egg-cell, a certain quality that generally is transmitted, at first to a high potency, later, as the differentiation progresses, overshadowed by the specific qualities, the functional qualities of a cell in an organism. No matter what *entwickelungsmechanik* will say as to the mechanical influences dominating this phenomenon, that we know are present and can be demonstrated, the fact remains, that under certain circumstances, a single cell of a complex and adult organism may give rise to the formation of a complex new organism. This quality cannot be located; we may look for it in the chromatin, in the germplasma of Weisman and other constituents of cells, the causes, that constantly effect the same results must be somewhere. They lie, as yet, beyond the reach of our thought, but they show definitely that the organism is a whole, that its order and life is not brought about by the coworking of a number of cells, but that the organism simply divides its mass into compartments or departments, each serving a special purpose to preserve life and to preserve the race. That even cells of the adult organism, differentiated, to a degree, that, as a rule, does not allow of a differentiation into other forms, can show such

capacities, is shown by the observation on the transition of cartilage into epithelium. We cannot explain as yet, microscopically or by physical or chemical methods, this process; that it is there cannot be denied.

That there must be an intimate relation between all cells of an organism has been the result, too, of investigations of the regeneration of certain organs and portions after their loss. T. H. Morgan¹ has, after careful and tedious experiments, arrived at the conclusion that regeneration is the consequence of such an interrelation of all cells of a body, that exerts a presiding influence on the whole. That this does not mean the return to the resumption of "vital" forces is clear, and Morgan has suggested an ingenious way in which regeneration can be accounted for on this basis by mainly physical and chemical laws. Of course, he does not insist on the probable truth of his suggestion; it can only be said that analogous suggestions have been made as to the cause of growth of tumors (Ribbert).

And the subject of tumors may begin in the discussion of the work on some theoretically and practically most important portions of pathology and pathologic anatomy. It may be said right here that an uniformity of opinion as to the origin of tumors has not been arrived at. This would be a miracle with the inveterate habit of predilection for explanations, that in a way are out of the reach of exact and conclusive investigation. However, in following up the literature of the subject, one impression must be gained by every reader, that the number of those observers insisting on the implication of normal tissue cells into the formation and growth of a tumor, becomes less and less. Hauser,² the foremost advocate of this view of looking at the growth of a tumor, has repeatedly tried to prove its correctness, but in all cases the opposing side showed clearly and logically the character of the mistake made. By certain pathologists, transition of normal epithelium into carcinoma is constantly reported, with the intrinsic evidence in their reports, that the necessary care in determining the real condition has not been observed. As said above, investigators that have paid special attention to this phase of the question and to the difficulties connected with definitely answering it have uniformly found, that such change of normal tissue into tumor tissue does not occur. One of the main questions in the cancer problem is to the impartial mind settled; tumors grow from the beginning through multiplication of their own substance, destroy surrounding tissue in various ways, but never change it to tumor tissue (Bormann³).

With this question definitely answered, the origin of tumors is the next to be considered. There, too, a uniformity of opinion becomes more and more established, an opinion based at first on a hypothesis suggested by Cohnheim, later on made probable by an extensive compilation of investigations of certain tumors and lately brought in analogy, not to say by proving the identity with certain experiences with carcinoma,

often observed. It is Ehrlich who deserves the praise for calling attention to this point. The objection made to the origin of tumors from misplaced tissue-elements, misplaced in the course of the fetal development, arising at different times of the growth of the fetus and therefore showing various degrees of differentiation and at the same time of capacity of differentiation, that such tissue-elements could not remain intact and able to proliferate till the time of life when ordinarily tumors are observed. Hauser especially objected to this proposition. Histologic investigations of fetal tissue have since established that the occurrence of such misplacements of tissue out of the normal, physiological connection is frequent and occurs rather normally in all individuals, in all organs, and is especially easily found in regions where later these regions prove to be the site of proliferation of carcinomatous growths. The connection with these misplaced masses of cells and the following carcinoma cannot be demonstrated directly. Bormann, as was reported last year, has established, however, that a partly indirect proof of it is that skin carcinomata occur in the greatest majority of cases in those regions, where mechanically the chances for transposition of tissues are greatest and where, on investigation, such displacements can be demonstrated. Bormann's researches have been confirmed by a number of observations, not to be mentioned in detail, since then. The essential point in the question is, that in all cases thoroughly studied, even the smallest, most minute tumors were constantly independent structures and totally distinct from the cells of the surrounding, originally identical tissue. The primary origin of a tumor has never been seen, in spite of the great number of reports, which describe the genesis of a tumor from in some way pathologically changed tissue. Ehrlich has added to this circumstantial proof the consideration of the metastases of carcinoma that appear many years (see Osler's cases of late vertebral metastases of carcinoma of the breast), making no symptoms in the interval between the removal of the primary growth and their appearance. Their growth, certainly, has been a very slow one; they have stayed for a long time in a latent or dormant condition, until circumstances resulting in stimulating their proliferating capacity made them active and destructive. It appears to the writer that this fact is likewise applicable to transposed fetal elements, the proliferative quality of which, after a long time, is proved by a great variety of tumors that cannot be explained as to their origin, other than by fetal displacement. The only other explanation possible would be a metaplasia of cells of a degree for which no similar or analogous observation is known.

From all this it appears that two points about tumor growth are rather firmly established, the absolute independence of the growth from the surrounding tissue and their congenital origin from dystopic fetal cell complexes, representing a series of formations starting according to the stage

of differentiation of the fetal cells, starting with tumors characteristically called fetus in fetu through all gradations to tumors consisting only of one form of tissue. The greatest practical interest lies in the explanation of the so-called malignancy of certain new formations and in the question, what cause is at the bottom of the proliferation of cellular inclusions, often after a very long time, since they have arisen. A definite cause has not so far been found, although we must admit that, in a way, the proliferation is analogous to other processes nearly related to tumor formations. The proliferation of inflamed tissue is tumor-like and sometimes unlimited, inflammatory tumors. The usual return of inflammatory tissue to normal conditions is due to its location in its own soil. The idea, that cells in physiologic normal arrangement do not proliferate indefinitely because they stand under certain restrictive dependence from the surrounding tissue, a point that by Ribbert, Bormann and many others is made strongly probable, for instance by the unlimited proliferative quality of a skin graft, that in its normal location would have remained the same during a lifetime, while transplanted on a denuded surface it will grow, and may be from here transplanted successively on an unlimited number of other denuded surfaces with the same result. The final result would be the production of a mass of epithelial tissue many thousand times greater than the original mass. In its normal location it would never have exceeded its original volume, due to the restricting influence that its interpolation into the working mechanism of a complex structure exerts. Remove this influence by placing the tissue in surroundings not being in physiologic relation to it, it will, if other conditions of growth are given, proliferate and form a tumor. Experiments proving this position are well known and need not be quoted here. The character of the influence is obscure, but, as Morgan has shown, is accessible to investigation. A suggestion is, that it represents some intercellular tension between the portions of a tissue or its cells. The conditions, besides freedom from the normal connections, necessary for proliferation, are likewise obscure, although many observations lead to the opinion that chronic inflammatory changes of the tissue, into which a foreign complex is transposed, form a stimulus. This, at least, is the usual finding in carcinoma; on it Ribbert has laid great emphasis.

The main progress made during the year in the elucidation of the nature of carcinoma was afforded by the study of mouse-tumors. The investigations have been carried on all over the world, mainly in England, Germany, France and in our country. After establishing the fact that these carcinomata in all respects are homologous with those occurring in man, the study directed itself first to the phenomena of transplantation. Except for Bashford's work, all the rest has been absolutely unanimous in the result, that the implanted cancer tissue always only grows by the proliferation of its own cells, and that no tissue cells of the

host are involved. It was found that in mice not seldom a spontaneous disappearance of the tumor occurred, and that the animal afterwards was immune against reinoculation. The results, however, contradicted themselves in many cases, so that final conclusions on the reaction between tumor growth and the normal tissues of the animal were not attempted. All this work has accumulated a valuable material, but material that could not be interpreted. It was Ehrlich⁴ who, in his classic methodical way, attacked the problem. His preparations for it consisted in the collection of a great number of mouse-carcinomata, their transplantation to other mice and microscopic and biologic study. The virulence of these tumors was found to be very weak, so that positive results were obtained only in about two to five per cent of the inoculated animals. It was, however, found that the tumors grown by transplantation and selection gave more takes in the next series, till after a long number of successive transplantations a virulence was reached that resulted in takes in 95 to 100 per cent. Ehrlich, thus, was in the possession of tumors, that allowed with almost mathematical correctness to calculate the results of the experiments made with them. It was found that mice inoculated with a primary tumor without effect, withstood the transplantation of the most virulent tumor. The resorption of the first tissue fragment, therefore, had produced an active immunity, that for a long time persisted. It was found that a normal mouse could be protected against the growth of a virulent tumor by the injection of a pulp of an only little virulent tumor. This important result will be of wide bearing for the future. Another immensely valuable information was obtained by experiments in which a virulent mouse-tumor was transplanted to rats. The tumor grows rapidly, till an acme was reached, then was resorbed or sloughed off. These rats were immune against further inoculations. The most remarkable finding, however, is that this tumor growing at first in the rat with the highest rapidity could be easily inoculated into mice, but not on other normal rats. In mice it grows with undiminished virulence, rats are immune, while with the same tumor from a mouse, normal rats give positive results always. The explanation of this phenomenon could not be the presence of antibodies in the rat, for then the tumor would not have grown at all. Antibodies could not be produced during its growth, because in that case the virulence for mice would have been interfered with. Ehrlich concluded that the reason must be sought in the presence of a substance in the tissue inoculated in the rat, that is necessary for the growth of the tumor. Of course, the evidence that this is not a substance serving the nutrition of the tumor, is the proportion between the bulk of it and the inoculated fragment. The body, therefore, of the rat was a favorable soil for the tumor. That the tumor stopped to grow is due to this substance, sufficient in quantity to entertain the growth up to the time it was exhausted. Therefore, the body of the rat does not con-

tain this specific substance, while in the mouse it is present. This explained the immunity of the rat, the immunity of mice not taking, when inoculated. This immunity is not antitoxic or due to antibodies; it is due to absence of or low avidity for this substance X, that Ehrlich calls "Wuchsstoffe," a substance to produce growth. His name for this form of immunity is atreptic. Ribbert, in 1904, had explained in a very similar manner, that artificially misplaced epithelia in the beginning grew under the stimulus of substances in their protoplasm, but perished as soon as this material was exhausted. That Ehrlich's explanation is not a simple conjecture is easily shown. We know of a number of such "wuchsstoffe," for one of which, at least, their existence is positively demonstrated, for others very probable. While the assertions of Frankel on the effect of the internal secretion of the corpora lutea on the decidual alteration of the mucosa and the imbedding of the ovum are so far only theory, although upheld by findings in suitable cases, and the same the opinion of L. Pick, that the chorion-epitheliomatous proliferation is due to an excessive secretion of lutein, the work of Starling has definitely proved that such relations exist. The mammae of female rabbits that have not conceived are in a state of atrophy, the whole organ containing only a few glandular structures. By repeated injections of the fluid obtained by pressure from rabbit embryos he saw the mammae enlarge and take on the condition found in the later stages of pregnancy.

This substance X must be assumed not to be a specific substance, specific for the assimilation by cancer cells, but a substance for which receptors are present in greater or smaller numbers in all cells of the body, or that the avidity for it exists in all cells, but differs somewhat in the various forms of tissue cells. A decrease of this avidity in the system, therefore, will be in favor of those having the highest avidity; they will continue to grow and proliferate. Ehrlich's ideas were almost simultaneously expressed by Albrecht,⁵ who also attributed the proliferative capacity of tumor cells to their high avidity to assimilative material.

This theory accounts, to a degree, for the comparatively rare occurrence of metastases in carcinoma, although we know that the chances for it are given in any case almost constantly. As the growth arises mainly in the decline of life, where all functions begin to be decreased in intensity, the avidity for nutritive substances becomes less, the high avidity of carcinoma cells will control all of the substance for its actively living tissue. Here the utilization is most intense, and the cells swept away by the lymphatics or the blood channels will not receive sufficient of it to proliferate actively. An interesting evidence for this is the demonstration made by Harland,⁶ that macroscopic metastases in mouse carcinoma are very rare, but that on microscopic examination the lungs, for instance, are full of capillary emboli, consisting of cancer cells. Cases with macroscopically visible metastases are very rare; one of them came under

the reviewer's observation, with an immense adenocarcinoma of the left anterior breast and many pulmonary, large metastases, some the size of a pea.

A very remarkable result of Ehrlich's researches is also, that active immunity is produced by carcinoma cells, not only for different forms of cancer, but also for sarcomata and even for a malignant chondroma. While there exists a specificity for the species, the explanation is most likely the fact, that tumors arise from cells out of their normal relations, and that under those conditions their avidity or the number of receptors for the substance X is increased. This does away with the attempts so far made to use for specific treatment of cancer only material derived from the same tumor, whose bearer is treated, or from a tumor of the same character and location. Clowes⁷ has asserted that in animals with a spontaneous recovery from tumor, the serum is antitoxic or cytolytic, and that its injection prevents the "take" of an inoculation with tumor tissue. His observations are not conclusive, as he worked with tumors of uncertain virulence. Ehrlich rather thinks of the production of an active, not an atreptic immunity by the use of material from a tumor of little virulence.

The further study must show how these researches will have a bearing on human cancer. One fact is certain, that mice can be protected by active immunization against inoculation of cancer-material—that is positive in normal mice. There is no doubt that this fact means that it will only be a question of time when it will be applied for man. Aside from the practical side of this work, it has thrown light on many biologic problems that so far have been considered as unaccessible. We have a firm basis now for the study of the general, that means biologic nature of tumor formation. Whatever the origin, Ehrlich has shown that they can be demonstrated to be different in physiologic qualities from the normally arranged tissue cells. That we have to deal in them with something independent from the normal interrelation of the functions of an organism. The proof for this is that it is possible, at least, for one animal to control this interference with normal conditions. Experience tells us that such a demonstration must finally result in the successful use of the method in other organisms with absolute identity of the character of the interference. What this substance X is, is not known; the demonstrations of Blumenthal,⁸ that in carcinoma tissue, enzymotic bodies are present, not demonstrable in normal tissue, may be a starting point for experimental investigations to characterize the nature of the substance. One thing is certain, that Ehrlich has made it possible to attack cancer problems in a definite direction, the experimental results are convincing, and the point is by further investigation to arrive at a clear insight into the correctness of his interpretation. It may be that the final explanation will be of different character, nevertheless, his results will, whatever their

final explanation will be, be of immense value for mankind. At least the protection against carcinomatous invasion will be accomplished in a reasonable time. As to the dealing with the established condition, the outlook is possibly also made more favorable. As to greater facility of these studies, that took Ehrlich years of continuous work, a paper must be mentioned by Beebe and Ewing⁹ on the so-called infectious lymphosarcoma of dogs, a typical tumor, that with ease and great certainty can be transplanted, and, that as far as present knowledge goes, produces by spontaneous disappearance and by the injection of attenuated tissue an absolute immunity. Another publication by Sticker,¹⁰ on a similar tumor, also in dogs, makes the contact infection from individual to individual a certainty. It is a tumor acquired during coitus; the primary lesions correspond always exactly in their location in vagina and penis the points of contact. Several interesting results have been the outcome on the experiments with this tumor. The reach of our ability to experiment has thus been greatly increased and a new era of tumor research has begun. The coming years will bear rich fruit.

While for the tumor question a definite progress can be stated, that we, with our human capacity, must consider as working in the right direction, the other most important, because most widely spread, pathologic process, the tuberculous infection, has, in spite of immense work spent on it, remained this year the object of the bitterest discussions and fight. On the principal sides of the problem no uniform opinion has as yet been found. Even experimental investigation has led, in most cases, to absolutely contradictory conclusions. The origin of the human infection becomes more and more unanimously accepted as human. For several reasons the fear of the bovine virus is still maintained and preventions against the rare possibility of infection from this source are still advocated on a large scale. The observation, that the origin of real cases of bovine tuberculosis could mostly be traced to the intestinal tract, made bovine bacilli in milk and other foods for many a danger greater than the contact with the human tuberculous individual. Behring's assertions have raised an attempt to verify them, and there is no doubt that the result, apparently, has been confirming, as far as the methods used were understood in their character. Especially the French school, under the guidance of Calmette's¹¹ work is today maintaining that almost every pulmonary infection arises on the way from the intestine to the lymphatics and from there through the blood to the pulmonary capillaries. Uffenheimer's¹² experiments have seemingly shown the same thing. The objection from the other side is, that with the frequent absence of tuberculous changes in intestine and mesenterial glands, such a possibility could not be thought of, because tubercle bacilli cannot enter without at the point of entrance to cause tuberculous changes. It is mainly Baumgarten that strongly insists on the necessity of demonstrating such

changes before the explanation can be considered. After all, it seems that the latter author is not quite sure of his statements, as certainly other substances, foreign bodies and bacteria, can be resorbed without causing disturbances into the lymph-channels and deposited in the regional glands. Anthracosis of mesenterial glands is just now discussed with great fervor, the inhalation theory condemned and resorption of the pigment by the intestine maintained. Here, too, no final word has been spoken, just as little as about the passing of tubercle bacilli without causing lesions of the intestine. That the methods of proving by experiment the one or the other eventuality are not, in spite of the greatest precaution and the most original devices, conclusive in their results, has lately again been shown. The introduction of infectious material into the stomach can, perhaps, be done without depositing any of it in the mouth or pharynx. Careful experiments, however, have shown that the bacteria ingested are, under certain conditions, carried upward, and not downward. Injection of the material (*bacillus prodigiosus*) into the rectum shows in a short time this organism present in the stomach, mouth and nose. From the latter surfaces they enter the trachea and are found in the lung tissue. The consideration of this fact makes the direct penetration of tubercle bacilli through the wall of the intestine, without causing lesions, at least doubtful; the subject has to be put under the most close scrutiny before it can be used as evidence. It is true that there is pathologically a different histology to the lesion, whether produced by the infection through the circulation or by introduction through the bronchial tract. Calmette asserts that early pulmonary foci always bear the character of capillary origin, while artificially produced lesions by inhalation give a different picture. The truth is, that the earliest lesions only exceptionally come to our notice and can be examined, while it is impossible to draw from an advanced tuberculous product any deduction as to its origin. The perfect freeness from tuberculous changes in intestine and lymphatics in the majority of cases of pulmonary tuberculosis, almost forces to the opinion that in them the virus has come the way from above and not from below. Of course, these discussions, as far as practical results are concerned, are of no importance, as the introduction through the mouth or nose will remain always the way the invasion takes place. The decision for the one or the other will not alter the measures, attempting to prevent infection. In this respect it is important to mention that the quantity of virus necessary to bring about a dangerous infection is considerably larger, as that it could be caused, if only an occasional contact occurs. At the best, such a contact will make a small focal change, that, by the natural powers of defense of the organism, is sooner or later eliminated. In this light the meaning of the immense morbidity of tuberculosis must be considered (95 per cent), if it is compared with the mortality (7 to 10 per cent). If we were able to go into

the life history of a case of established tuberculosis, the result will always be the demonstration of a close contact with a tuberculous subject for a long time and continuously. Animal experiments (guinea-pigs the most susceptible of all) show that a certain number of bacilli must be inoculated in order to lead to a fatal infection. Very small numbers cause either no reaction or only such slight changes that the resisting power is sufficient to deal with it. The way of protection, of prophylaxis is given. It will not be done by the health board restrictions and isolation and disinfection, nor by sanitarium treatment, that, by the way, already has proven its insufficiency in fulfilling the hopes entertained for it; it will be done by better education of the public and mainly the profession, to learn to diagnose tuberculous infection before the bacilli can be demonstrated in products of destruction. This can be done; that it is not done is a crime. Koch, himself, has expressed himself in similar terms in his last lecture in England. The tuberculin reaction must become one of the routine measures of medical men. Through a method that later will be touched, even without the inconvenience of the tuberculin test, certainty can be obtained. It is due to Wassermann's work, that this is made possible. Pathology and bacteriology are able to deal with tuberculous infection of mankind, as it already does in cattle. Medicine must utilize this result and not waste time, work and chances in enthusiasm about registration, disinfection and sanitarium treatment. Intrinsically, this is the view of all well familiar with the pathologic and bacteriologic character of the tuberculous infection.

In other directions the problems of pathology and pathologic anatomy have comparatively little advanced in clearness and elucidation. The single items show that the detail work still dominates. It is directed, however, more and more by the attempt at experimental proof than by that of accumulation of identical findings and the drawings of conclusions from this on the nature of the process studied. For instance, the nature of liver-cirrhosis has been assumed to be a secondary consequence of damage to the liver substance itself; it must be admitted that the reasons for such causation can be, to a degree, suspected from the histologic character of the lesions produced. In spite of innumerable attempts to directly prove the correctness of this explanation, the results were more or less doubtful. Beebe,¹³ in occasional findings in animals used for the production of antitoxic serum, found liver changes suggesting a process similar to that observed in human cirrhosis. This led to experiments with the injection of hemolytic serum into animals, to watch the effect as to changes produced in the liver. The result was a positive confirmation of the ideas entertained about the process going on in human cirrhosis. There are slight differences to distinguish the first from the latter, but the result proves definitely that cirrhosis is only a secondary phenomenon, and that the primary factor is a damage wrought by toxic

substances acting on the liver cells themselves. By this work the study of the etiologic factors in the disease is generally simplified and made accessible to experimental investigation.

The subject of arterio-sclerosis, too, has played a great part in the late experimental pathologic researches, on account of the observation that the intravenous injection of suprarenal substances (adrenalin) caused in animals lesions, especially of the beginning of the aorta, in many respects suggesting the picture of arterio-sclerosis in man. The observations for themselves are of exceeding interest, showing the effect of an intoxication leading to a specific histologic change of the vascular structures. Closer study, however, revealed that the changes caused by adrenalin in animals only resemble arterio-sclerotic lesions that histologically are widely different from them. (Pierce and Stanton¹³). So far, there is no material on hand to show whether the therapeutic use of adrenalin in man causes analogous changes in the blood-vessels, and the studies must be for the present considered as interesting and important, but not as yet proved to have a bearing on pathologic processes in man. They prove, however, how little we are aware of the many biologic effects that are exerted by certain substances produced by our organism in organs, the meaning and physiologic action of which is mysterious or only guessed at. The therapeutic action of adrenalin is not known in its nature, nor is it known what action it has on the maintenance of the equilibrium of the organism. The great material so assiduously collected by Sayou in his great work, is only suggestive, but in no way and in no particular point conclusive. The investigation, experimentally conducted, on the effect of adrenalin on the circulatory structures, must be pronounced, therefore, as very valuable and necessary. Adler and Hensel have produced similar lesions by using nicotin.¹⁴

In most of the other pathologic questions the progress has been very slow and even doubtful. In most of them, so far, the microscopic establishment of facts is the prime object of work. This is especially the case when it comes to the discussion of the nature, origin and relation of the different cellular formations of our body, called white corpuscles. As far as microscopic investigation can go, the general consensus is the correctness of the teaching of Ehrlich, that the so-called granulated and not granulated elements of the blood are derived from different sources and have no direct connection with each other, while others, following Pappenheim's ideas, assume a common origin for both of them. With the difficulty of differentiating by staining reactions the various elements under discussion, especially with drawing from certain staining reactions conclusions of affinity and identity, all this work has only a relative, subjective value. This obtains, too, for an extensive publication of Dominici,¹⁵ based on

many careful investigations of the haematopoietic tissue, but neglecting the fact that single observations with the great variations of personal equation cannot be made the criterion for general conclusions. The truth is, that knowledge of the specific qualities of the haematopoietic tissues of the animal organism is today as scanty as it was before. Objective microscopic investigation still holds as the most probable interpretation that given by Ehrlich. The same obtains in the interpretation of changes in the lymphatic structures, the impossibility to obtain clear ideas about the relative value of differences occurring in their pathologic alterations has not been overcome, and, therefore, even today, any designation of changes with a specific title must be considered with suspicion. A valuable consideration of this inability to attain reliable points of differentiation has been given lately by Seelig.¹⁶ His careful studies of the character of the so-called reticulum in lymphosarcomata and round cell sarcomata has not even here proved of differential value.

Other problems of special pathology, so for instance the Langerhans-Island-diabetes theory have had their share of work that, unfortunately, leaves the question open as before. The latest extensive and thorough work of De Witt¹⁷ concludes again with the probability that changes in these structures are causative of diabetes.

Ribbert has promulgated an anathema on the habit of calling inflammatory changes a method of protection, that is said to be anthropomorphic and has no place in biologic considerations. He applies to inflammatory changes the effect of the disturbance of the physiologic interrelation between adjoining cellular structures, that, as he has pointed out, conditions the normal arrangement and function. The act of inflammatory proliferation depends only on the disturbance of this relation, the severance of the connection, that in all cases will and must lead to proliferation, until a status is obtained, in which normal relations are restored and the mutual influence of the structures re-established. Ribbert's view is certainly correct, but he must admit that, talking of protective purpose of inflammatory processes, we have used only a language that was expressing more the practical consequence than the theoretic aspect of the phenomenon. Ribbert's paper is, however, characteristic of the trend of thought that begins to prevail in the interpretation of pathologic processes. There always has been and still is too much of antropomorphism in it.

Mallory's work on fibrillae of connective, muscular and neuroglia tissue has been sustained by the establishment of very similar structures, or epithelium, in normal or pathologic conditions. Thompson¹⁹ has published a paper that demonstrated such fibrillae in and between the cells, and he subsumes, under this title, the well-known bridges between them (prickle cells). The work is certainly a valuable ad-

dition to our histologic knowledge, but, so far, it cannot be said that it has opened new views. We know nothing of their origin or function, although it is very probable that they are products of the cells. They can be stained only by specific methods; that these methods obtain for all of them, does not prove that they have all the same character and meaning. As they are always present in some normal and pathologic conditions more than in others, as they occur in all classes of vertebrates, they cannot be without some meaning for the functional qualities of the tissues in which they occur. What their qualities are, what the relation of fibrillae, for instance, is to connective tissue fibres, we do not know. The delicacy of the method by which they must be demonstrated, makes a general study very difficult. The necessity of using only very fresh material, is an obstacle that often, possibly, cannot be overcome. These fibrillae add to our conviction that histologic methods, so far, have not revealed to us but a small portion of the real structural composition of a subject. And in addition to this, we never know to a high degree of certainty whether the stained objects represent conditions existing in the living state, or are the products of artificial changes of the material, that are the condition *sine qua non* of histologic studies. In this line, too, a decided progress can be reported, as lately the examination of living tissues has been recognized as a method that, under certain circumstances, will yield more correct information than the most delicately stained specimen. The ultraviolet microscope will be of great help in the study of living material.

It would take many pages to continue to refer to work dealing with subjects for themselves interesting, but not of general bearing. In many, exceedingly interesting results have been obtained, for instance, the problem of the process in which calcareous deposits are formed or the changes taking place in the transversion of cartilage into bone, or of connective tissue into cartilage and amorphous calcareous or true bone tissue. The remarkable metaplasia obtaining in these phenomena is of great importance for problems of much wider reach, as mentioned in the beginning of this review. The subjects dealt with are so diverse in nature that too much space would be needed to present their meaning in a proper form.

As leading over to the progress of bacteriology, so-called, that in reality is today simply a part of general biology, the bacteria playing only the part of a factor in the biologic problems, it may be recalled that the pathologic effect of toxic and immune substances on normal tissues has been extensively studied, and that in some cases the results were such that important conclusions could be made for the solution of problems of practice. Beebe,²⁰ by demonstrating the toxic effect of hemolytic sera on liver cells, has opened a field of research

of a wide extent, and he also has, by the investigation of certain specific nucleo albumins, allowed of the prognosis that toxic action can be recognized by definite pathologic and histologic changes. As yet, the subject is still in its infancy, but it has been inaugurated in a way that much hope can be entertained for important developments in the near future.

As to bacteriologic work done, all of it can be separated into two classes, the first that deals with bacteriology as such, that means with the morphologic, biologic and developmental qualities of these organisms, not to mention the attempts to arrange them systematically in the so-called natural relation to other microorganisms. This class is omitted here, because whatever of it reflects on the second class will be utilized. The latter attempts to achieve intimate knowledge of the relation and effect of bacteria on the life and health and disease of other organisms. For our purpose, we have only to consider that side of the task that deals with health and disease of animals and men. Two important sides of the problem are those that establish the causation of infectious disease by bacteria and other microorganisms, and on the other side those that try to find an explanation for the way in which the microorganisms do their work, and in what way we can create obstacles, preventing or changing their effects. Both of these tasks have been carried on and advanced considerably during the last year. The first not so much for bacteria, but for other microorganisms.

New in the list of disease-producing bacteria is a bacillus discovered by W. Ford Robertson,²¹ in cases of general paralysis of insane (dementia paralytica). The organism, called bacillus paralyticus, is said to be at the basis of the tremendous mortality from this disease. It resembles a diphtheria bacillus, can be cultivated, and is pathogenic for rats, but not for guinea-pigs. The symptoms produced in rats correspond in some way to those seen in human paralysis, especially those during the final congestive attacks. They are found in the intestine, bronchi, nose and ear, and are present in the urine. They are demonstrated in the cortex and in the meninges. From blood they have also been isolated. Robertson discusses, in all details, the reasons which lead him to pronounce this bacterium the etiologic factor of general paralysis. It is very difficult to criticise the paper, as long as no other observations from other investigators have been forthcoming. The facts in the case are these, that the bacilli are present in great numbers and seemingly in pure culture in the organism of a paralytic, they are present especially in the cerebral lesions. Experimentally, they have produced in rats and goats a fatal disease, that from the description given certainly may be analogized to symptoms in human paralysis. Before anything definite can be said, other

researches have to confirm Robertson's report. Pathologically, it seems that a reactive activity of the body, as shown by the presence of certain immune substances, is very suggestive, although alone not conclusive. The work will stimulate wide research, and in due time receive its verdict. A priori, the possibility of such a causation of paralysis cannot be denied, although to the bacteriologist it appears an unusual deviation from the habits of diphtheria-like bacilli to appear in the blood and to cause lesions of the internal organs by intoxication. The fact that they are only with difficulty demonstrated in the organs, appearing mostly as forms of involution or degeneration, is somewhat suspicious. That they are passed with the urine is also a suspicious phenomenon, as this would mean a constant septicemia. If Robertson's conclusions prove to be true, he will have done a great work. For the present, any meaning expressed for the pro or contra is not justified. Impartial control investigation has to be done.

Other new pathogenic bacteria have not been found. The fight about the pertussis organism is waging as before, and today we have about six different organisms, whose fathers claim that only their own offspring is genuine. Great importance may be attached to the extensive studies on anaerobic bacteria, as causative factors in many obscure conditions, and especially suppurative processes of the osseous system and the intestinal canal. The methods for isolation and cultivation have been greatly improved and facilitated during the last year, especially by French bacteriologists. Definite results have not been achieved, although it has become very probable that many obscure disturbances of the intestinal tract in infancy are due to the work of anaerobics. Their symbiosis with aerobic bacteria in certain infections and their pathologic character in the latter also begins to be the subject of study.

As to the rest of pathogenic bacteria, the methods of demonstration and differentiation have not changed much. That the cultural and microscopic findings have taken almost a back seat is due to the much more specific reactions that these bacteria or their products give with the body-fluids of an infected organism. The final decision, today, is always only based on them. For the different forms of dysentery bacilli, their study has resulted in such a complex condition of these reactions, that even Park considers it one of the most difficult tasks to be performed. Further details about this side of the progress of bacteriology would be of very little general interest. This is more attracted by the investigation of the reactions between a parasite and the infected organism. Ehrlich's principles still obtain and are the guiding star in all the later observations. Whether their basis is true, whether perhaps their theory is true, we do not want to discuss here at this time. The fact is simply this, that everything that has been

done to effectively influence infectious diseases by specific reactions is based on Ehrlich. His theory has, at least, again proved practically eminently valuable. In the first place, under these applications of it, stands the study of the meningococcus of cerebrospinal meningitis, made by Flexner.²² He has been able to open the way that this disease will be in the future controlled by the reactive products of animals artificially infected with the organism. The definite character of this agent is not quite apparent, but its effect has been established, at least, for animals. His experiments on the other side, have furnished an illustrative example of the danger that lies in conclusions drawn from observations during the course or after the end of the disease. He has demonstrated that in this form of meningitis, the organism injected into the spinal cord appears in great abundance in the nasal cavities. The occurrence, here, has so far always been considered as the port of entrance, while it most likely is only secondary. For dysentery and pneumonia, specific sera are prepared. Kraus,²³ in Vienna, claims even to have found a dysentery antitoxin. That he has not to do with a real antitoxin, just as little as Calmette's antitoxin for typhoid is a real antitoxin, is clear. The effect of his serum that seems to be established is rather due to specific substances, acting only under certain conditions of the infected individual by bactericidal effects. Wherever this effect cannot be brought about by the incapability of the individual to produce antibodies, the serum will fail. In the cases with sufficient vital energy, the stage of the disease in which the serum is administered is the factor that decides about a beneficial effect. Calmette's serum cannot act beneficially on an organism at the height of infection and endotoxin intoxication; it can only do good at the beginning of the infectious process. The production of antitoxin by bacteria with a totally bactericidal reaction and a consequent production of antitoxin is nearly absolutely excluded by the whole clinical picture of the disease. The antitoxic serum for anthrax of Sobernheim belongs to the same category; a real toxin production by this bacillus has never been established. A bactericidal serum—what all of these sera are—will only act, cutting short the infection by killing the infectious agent at a time when their number has not increased to a degree that the total amount of endotoxin resulting from the disintegration of the number of bacteria present will form the dose fatal for the organism. The latter can never be determined in man; in animal experiments this has been shown to be the state of things. The announcements, therefore, of sera, known to be produced by bacteria not secreting a soluble toxin, but only acting intoxicating by the destruction of their body and the resorption of the products of this destruction (endotoxin) by suitable receptors of the infected organism,

must always, *a priori*, be considered with suspicion. The investigation of the true character has always established the above sketched relations. The hope to prepare sera for the cure of well-established infections of this character that means neutralizing a toxin that is not known, is, on general principles, *a priori*, futile. Only in rare cases, the pyocyaneus and the botulism infection, such conditions have been positively established. For typhoid, dysentery, plague and others, no data are known, that only allow to think of such a possibility. The trend of scientific thought, therefore, has been during the last year, not even to go to the trouble to contradict such apparent results, but to leave their fate to the practical application and the necessarily following failures.

The hope that all infectious diseases were amenable to treatment with specific substances, like it has been established for diphtheria, tetanus, pyocyanous infection and botulism, has only been entertained by men not aware of the incontrovertible facts obtained by scientific investigation for other diseases. Our whole knowledge of immunity reactions is based on this point. Its truth is, at least, practically shown by the results obtained by their application.

As to the theory itself, no change has taken place during the last year that would indicate that it is a failure. On the contrary, it has led to a widening of our means to scientifically recognize the presence or previous existence of infectious diseases, that by other methods could be done only empirically by comparison or experience or statistics. This is due to original work first done by Bordet, years ago, but not recognized in its intrinsic importance, and then firmly founded and elaborated by Moreschi and Pfeiffer and put to application for practical purpose by Wasserman and by Neisser and Sachs.²⁴ It is a method that, by means of a combination of immunity reactions, too complicated to be detailed here with any benefit to the reader not conversant with the subject, gives even with the minutest amount of immune or toxic substances a reaction so palpable and so definite, that if the proper precautions are taken, no mistake is possible. It is possible with this method to demonstrate almost infinitesimally small traces of proteids, of antigens and of antibodies. The specificity of these reactions is fully established by an endless number of control experiments, made since first the method was made known. By this method we are able today to determine, in obscure conditions, the existence of tuberculosis, syphilis, glanders and other chronic diseases with a definiteness that has been borne out by the most scrutinizing control. The procedure is the most definite evidence for the remarkable extent to which specificity of organic substances goes, and that even exceeds the limits which are set to physico-chemical methods for acceptable conclusions. The specific-

ity of these reactions of minute amounts of material is so remarkable that we are at a loss to account for them. The relation between the quantity of substances influencing the reaction and the physical effect produced is so startling that no handy explanation can be given unless we resort to the basal conceptions of Ehrlich's theory. On these principles the method has been developed, showing the fundamental correctness of the conceptions which he established. The extent to which this method will influence our diagnostic, prognostic and prophylactic measures cannot be determined at the present. For sanitary, hygienic and specifically medical problems, it will be of the utmost importance. Wasserman and Plaut,²⁵ for instance, found that, by its application in the majority of a great number of cases of general paralysis, the presence of antisyphilitic substances in the blood could be proved. The general trend of opinion is, that tabes and paralysis are late or post-syphilitic conditions, although the researches of Robertson, reported above, would contradict this. The point in this question would be to determine whether in individuals, recovered from the infection and not showing paralytic symptoms, these same antisyphilitic substances will be found. The authors are very careful, on this account, to draw definite conclusions. By this method it is possible to diagnose an obscure chronic infectious condition, where other means have failed entirely to definitely establish its etiology. The differentiation of the origin of blood and of other proteid material by this method is finer and more convincing than by the original precipitin reaction originated by Bordet, generalized by the reviewer and by Wasserman, and applied for practical purposes by Uhlenhuth.

As to the treatment of and vaccination against infectious diseases, nothing very important has developed during the last year, methods are more refined and the indications more definite. No antitoxins, except those for diphtheria and tetanus, are today used for preventive purposes. It is true that we hear, in the literature of France, about an antitoxic serum against typhoid (Calmette), in Austria about such a serum against dysentery. The toxin prepared for the immunization of serum-giving animals have nothing to do with the nature of the real toxins; they belong, most likely, to the endotoxins, for which, on account of their structure, no antitoxin production can be imagined. The sera of Calmette and Kraus have the character of bactericidal sera, the limit of the utilization of which is well defined and understood, as explained above. The evidence brought forth for the antitoxic nature of these sera is not conclusive. They can only be employed as vaccines or in the first stages of infectious diseases—never when the picture is fully developed. Wolff, in many publications, has clearly stated the experimental data that obtain, and that

make it a futile attempt to prepare antitoxic sera by means of bacteria, fatal by their endotoxin, that means the destruction of their body intactness.

As to Ehrlich's theory of immunity reactions, the status is the same as last year. While on the one side much and important material has been accumulated again by the influence of the ideas of this author and bearing on them, there is nothing that adds new features to the great structure. It has lost very little of its dominancy, and is even by enemies pronounced so far the only method to penetrate into the depth of many biologic processes. How valuable it is when applied to structurally altogether different problems, Ehrlich himself has shown by his studies on tumors. The antagonists, especially in physical chemistry, have not been able to refute the objections that on theoretic principles must be made against the explanation of immunity reactions after mere physico-chemical laws. The enthusiasm for the colloidal theory has greatly subsided, while the study of colloids, as such, has so far not brought results that allow of a clear understanding of their physico-chemical character. Altogether, the steps in arriving at what the truth is, have not advanced, and Ehrlich's words reign, like before, supreme. They will certainly be supreme for a long period to come.

An important addition to our views on the relation of bacteria to the organism, which accounts for obscure problems in certain infectious diseases, such as streptococcus and pneumococcus infections, is the opsonin theory, and during the last year this theory has been worked upon very exhaustively both in Europe and in this country. Mallorek, in his studies on the action of antistreptococcus serum, had come to the conclusion that it must consist in the stimulation of the phagocytes, causing a more active phagocytosis than normal serum could do. As no bactericidal or antitoxic qualities of such a serum could be demonstrated, nevertheless its action could experimentally be proved; this explanation was accepted, at least, in France. No explanations of the nature of this process were attempted, except that leucocytes were directly influenced by such an immune serum. It was only two years ago that the study of this question was extended. Almost simultaneously, Wright in England and Neufeld and Rimpler in Germany came to the conclusion, from their experiments, that the cause of the phagocytosis was not a stimulation of the leucocytes, but the presence of substances in the serum influencing, in some way, the bacteria so that they could become a prey of the phagocytes. The character of this process was first definitely established by Neufeld, who found that the substance acting on the bacteria was a definite body with qualities analogous to other immune bodies; he called them bacterio-tropic substances. Wright came to the same result,

independently, studying the reaction in normal and pathologic blood, and impressed with the apparent importance of the process, attributed to it one of the main features in the process of infection. His name for the bodies is opsonins—a name that has been generally accepted. From the extensive work that Wright and his followers have done, there can be no doubt that opsonin-action plays a part in the course of infections; Wright and others have made it the basis of therapeutic procedures, guiding their way by the establishment of an opsonic index, taken from a great number of experiments the average of opsonins in normal blood. The variation of this index in pathologic conditions is the direction for the application of specific treatment. The theory has been worked out to a complete system, and the results obtained from its practical use are apparently confirmatory. While there is no doubt that opsonins exist, and that they have perhaps an important function in keeping up the normal protective powers of the body, this role has not been definitely established. What the object of phagocytosis is, is not clear; whether it means simply a scavenger service, or directly a destruction of dangerous material, is not certain. In all of the opsonin investigations, no regard is taken of the varying virulence of the infecting bacteria, nor has any attempt been made to penetrate into the character of the change that bacteria undergo under the contact with the opsonins. That a combination of the two takes place is certain: absorptive or binding, we do not know. A great drawback to the exact demonstration of quantitative proportions is the method that depends upon so many factors, some not understood and only empiric, others influenced by the personal equation of the observer. This will not detract from the admiration which Wright deserves for the enthusiasm with which he has opened this new field of research and knowledge, but for it, too, the conclusion is that it must be capable of exact quantitative methods. It is very likely that this will be done soon, and that probably Wright will be, in a way, what Ehrlich has been to other immunity problems. Science will not be satisfied, however, until these exact methods have been found, and have confirmed Wright's conclusions. Opsonin work will be the leading trend of work for years. For literature on the subject, see Hectoen³² and Potter.³³

As to the aggressins that Bail claims he has discovered, the work of Wassermann has shown that they do not exist, and that the aggressive effect of fluids due to an infectious process is caused by the death of many of the infectious bacteria and the production thereby of endotoxins. Added to a living culture of bacteria and inoculated, this endotoxin will increase the toxic effect and cause the inoculated animal to succumb sooner than the bacteria alone would do.

To give even a short review of the work done in the study of protozoic diseases, would call for as many pages as this whole department can afford to take. It would involve the detailing of the investigations into protozoic diseases of a great number of animals, only some of them important as to their relation to the human race, but all of them in themselves equally fascinating and theoretically important. The amount of work done by English workers on different diseases in their tropical possessions is immense. In many of them the main factors of the diseases have been established, and the point where they all of them fail is the finding of specific means to fight against them. As all of these diseases in their transmission and existence are the consequence of an intermediate host of the contagium, the difficulties in the attempt to find means to control their ravages are very great. It takes a long line of patient observation to get a clue, and it is one of the best proofs of the ingenious originality of Robert Koch, that he, in some of these protozoic diseases found out the intermediate host and devised means as to how to protect against its dangerous attacks of man. By his studies the danger of recurring fever in man, caused by the bite of ticks that have fed on another recurring fever patient, the possibility is established for the prevention of such a contact. The same obtains for that fearful infection called sleeping sickness (*trypanosoma gambiense*), due to the transmission by the bite of a fly nearly related to the tsetse fly that causes millions of loss in the raising of cattle in South and East Africa. The same obtains for the pest raging in certain portions of South America, and making the raising of horses almost impossible (a *trypanosoma gambiense*, like that of the cattle disease of Africa and India, Surra and Nagana). For all of these, the way of transmission has been established through investigations so multifold that a detailed mention of the contributions is impossible. The literature on this subject of *trypanosoma gambiense* and *spirochaeta* diseases is so voluminous that it cannot be detailed here. The *Journal of Tropical Diseases* is a source in which reference to all of these diseases is easily obtained. Very similar protozoa, *trypanosomata* and *spirochaetæ* are at the bottom of human diseases. One was mentioned before. The relapsing fever, so long known as being characteristic by the blood carrying, at certain periods, *spirochaetæ*, has been investigated as thoroughly as never before by Novy.²⁶ His results as to the dealing with the disease are very interesting and perhaps important, as he was able to demonstrate the possibility of producing antitoxic substances against the action of the parasite. Owing to the unusual facilities he had for experimentation, his work on the *spirochaete obermeiri* stands foremost in any investigations of the disease. He has established that protection is possible, and that it

needs only financial resources and experienced workers, to prepare sufficient serum that prophylactically and even curatively will control the disease. His experiments and conclusions are very convincing, but they lack the spirit of those methods that have established our modern conceptions of immunity processes, where every step was controlled by the most scrutinizing and exacting control investigations. The relapsing fever is ascribed to an organism called a spirillum, considered as a form of the class of bacteria. Many forms of this character have for a long time suggested that they, in many respects, greatly differ from the characteristics of bacteria. Their cultivation has been impossible, and their whole course of development was a mystery, so much so that Turncliff²⁷ last year was led to assume that (fusiform) bacilli could change into spirilla or spirochaetæ. That her conclusions do not bear the criticisms of control investigations has been shown by Mühlens²⁸ and others, who finally succeeded in cultivating spirochaetes (especially the spiroch. dentium) in pure culture under anaerobic conditions. Altogether, spirochaetæ behave in their biologic qualities different from any form of bacteria known. Their spirillar form is not due to a spirillar arrangement of chains of bacillar portions, but they are single individuals and not chains of individuals. The method of division or multiplication is not established with certainty today; that they multiply by transverse division like bacteria, is very unlikely, in spite of the assertions made by Novy in this respect. Even if the division should be transverse, it would differ entirely from that of bacteria, by leading to a thinning out of the organism, and finally to the attachment of two cells to each other by only a very thin filament. Such conditions do not obtain for bacteria, where the division is transverse, from the beginning to the end, a form of division that has given them their special place in the system of lower organisms. The statement that the tapering at the opposing ends of two spirochaetes is due to transverse division is not tenable, because a spirochaete dividing along the longitudinal axis will, under the conditions given by the examination, entirely assume the aspect of two different individuals about to separate from each other, after having been produced by a transverse division. The detail observation shows not so rarely spirochaetæ that consist of two branches, having the same number of turns, and of a thick continuation consisting of only one spiral, that generally becomes thinner, where the two branches join. The whole picture, with the difference in thickness between the divided parts and the not-divided rest, is so clear, and the absence of any evidence of the union of the thinner branches to the thicker end of the formation so definite, that the impression of a longitudinal division cannot be suppressed. That spirochaetes multiply in the way bacteria do, has by no means been estab-

lished by Novy's observations, and it needs further study to finally determine this question. In spite of Novy's positive assertions, we cannot accept as proven the bacterial character of these organisms. Prowaczek's²⁹ work on certain forms is highly suggestive of a complex-cycle of development; the study of Mühlens' cultures has shown definite points indicating a multiplication by longitudinal splitting.

In regard to spirochaetic etiology of syphilis, the last year has brought an amount of work astonishing in its extent and explained by the great importance of this disease on human health and welfare. With the exception of a few childish and ludicrous contradictions (Sahling, Schulze, Sigel), that have found their condemnation immediately by Levaditi and Hoffman, the opinion is uniform that it is impossible to account for the presence of spirochaete pallida only in syphilitic lesions in any other way but by assuming its etiologic quality. Critics remind us of the absence of experimental proof of this, according to the principles established about the conditions by which pathogenicity only can be proven. Instances that such precautions must be considered, to avoid mistakes, are known. On the other side, where characteristic lesions exist where they are always combined with the presence of specific organisms, this theoretic restriction can only be the stimulus to double the efforts to cinch the evidence by attempting to bring the experimental proof. The outlook for a positive result is today brighter as before, as several publications have been made in a way suggesting that the cultivation of spirochaete pallida is only a question of time. After this is done, the experiment will immediately finish the splendid work of Schaudinn with the last stone, the production of syphilis by a pure culture of the spirochaete. As it is, all syphilologists, without exception, have been compelled to accept this causative agent as the truth; most convincing was the result with experimental syphilis in monkeys and other animals, where the anatomic-pathologic changes could be studied on the basis of definite data and methods. The cultivation of spirochaete will allow of directing these experiments at vaccination and perhaps cure. That the reactions of the body to the syphilitic virus are the same as in other infectious diseases, has been shown, so that even the possibility exists to recognize obscure pathologic conditions by serum-reactions. As to diagnosis, the presence of spirochaetæ pallida is decisive, although often its demonstration is difficult. The two methods of demonstration, smear preparations and Levaditis' method of silver impregnation of tissue, have been much improved during the last year, so that they are in reach of everybody that wants to use them. Talking about the syphilis organism and the work done on it, must be short or exceedingly long. It would be impossible in a few sentences to give an about approxi-

mate representation of the lines in which it has run. The literature is easily accessible. Besides, the dermatologic department will give an extensive review.

In regard to other protozoic diseases, known and studied before, only few additions and changes to the knowledge so far possessed have been made. A contribution by Craig³⁰ must be mentioned, who demonstrated that in the cycle of the malarial parasites within the human body, there regularly occurs a process of conjugation of the merozoites, that it is absent in the incubation stage and in chronic malaria, and that the symptom complex of malarial attacks appears as soon as conjugation begins. The biologic interpretation of this process is that established for other protozoa by Wilson, Calkins and others, the assumption of an effort at rejuvenation, after a long series of divisions without sexual processes. The knowledge about yellow fever has remained as it was. The latest report of the French yellow fever commission (Marchoux and Simond³¹) has not added anything of importance to it, except the proof that fresh cases of yellow fever can be caused by infectious female stegomyias that are able to hibernate, just as Schaudinn has shown for the anopheles females and malaria.

REFERENCES.

(Unless otherwise indicated, all references are for 1906.)

1. Jl. Am. Med. Assn., May 5.
2. Muench. Med. Woch., No. 22.
3. Muench. Med. Woch., No. 26.
4. Arbeiten, a. d. Koenigl. Gesundheitsamt fuer experimentalle Therapie zu Frankfort a. M. Heft 1.
5. Verhandl. der pathologisch. Gesellschaft zu Meran.
6. Deutsch. Med. Woch., No. 42.
7. Brit. Med. Jl., June 6.
8. Berl. Klin. Woch., No. 15.
9. Jl. of Med. Research, Vol. 15, No. 2.
10. Berl. Klin. Woch., No. 46.
11. Compt. rend. de la Soc. de Biol., Vol. 61.—Annal. de l'Inst. Pasteur.
12. Muench. Med. Woch.
13. Jl. of Experim. Med., Vol. 8, No. 1.
14. Jl. of Med. Research, Vol. xv, No. 2.
15. Arch. generale de Med., No. 11.
16. Berl. Klin. Woch., No. 33.
17. Jl. of Experim. Medicine, Vol. 8, No. 2.
18. Journ. Med. Res., Vol. xv.
19. Not published yet.
20. Jl. of Med. Research, Vol. xiv, No. 4.
21. Rev. of Neurol. & Psych., Feb.-Apr.
22. Jl. Am. Med. Assn., Aug. 25.
23. Wien. Klin. Woch., No. 27.
24. Deutsch. Med. Woch., No. 12.
25. Deutsch. Med. Woch., No. 45.
26. Jl. of Infect. Dis., Vol. 3, No. 3.
27. Jl. of Infect. Dis., Vol. 3, No. 1.
28. Zeit. f. Hygiene u. Infect. Krankh., Vol. 55, No. 1.
29. Arbeit. aus d. Kaiserl. Gesundheitsamt.
30. Am. Medicine, Vol. 10, Nos. 24, 25.
31. Annal. de l'Institut. Pasteur, Vol. 20, No. 2.
32. Jl. Am. Med. Assn., May 12.
33. Jl. Am. Med. Assn., Nov. 24, Dec. 1.

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

Feeding of Infants.—In reviewing the year's literature on the subject of infant feeding, one is struck by the fact that the same diversity of opinion, noted in previous reviews, still exists. The German school still refuses to work on the percentage theory, as advocated by American pediatricists. In Germany, the caloric value of the food is still made the basis of computation. In France and England—simple dilutions are still used—though in France whole milk feeding—even for very young infants, appears to be coming more into favor. It is noteworthy, however, that in America it is being recognized more and more clearly that laboratory modification of cow's milk on the percentage plan cannot afford the final solution to the problem. At the last meeting of the American Pediatric Society, Molt read a paper on "Some Phases of the Feeding Problem." Ardent advocate of the percentage system though he is, he admits that one of the great causes of trouble with the system "is the great number of complicated methods of calculating percentages which have been published." He feels that "we have erred in the refinement of our calculations"—and holds "that the essential thing is simplicity with moderate flexibility." In the discussion which followed the reading of the paper, there was practical unanimity of opinion as to the absolute necessity for simplification of method in modification. It is recognized that laboratory modification—even if it did offer the solution (and there are many reasons for doubting this) could only apply to a small fraction of cases needing substitute feeding; it is admitted that until some simple working basis for home modification can be found, the question cannot be considered settled.

Into the complex questions of milk chemistry—whose study is occupying so many men—whose discussions are filling the literature—it cannot be the part of such a cursory review as this, to enter. One has but to glance through the literature to see how much work is being done everywhere on the problem of the proteids for instance. And yet through it all comes the suggestive dictum of Jacobi that infant-feeding is not a matter of chemistry alone—that the baby is not a mere test tube. Meantime one fact stands out clear and distinct—namely, that the first requisite for *any* successful system of milk modification is clean, pure milk. It is recognized more clearly than ever before that no amount or kind of modification can make a poor milk good—it would almost seem safe to add as a corollary—that with good milk almost any rational system of modification will do. The world over, municipalities are beginning to recognize

their duty in this matter of supervision of the milk supply. It is a matter of congratulation to be able to record that in this respect some of our American cities are in the forefront of this great advance.

Abroad the spread of the institutions of the "Gouttes de Lait"¹² is noteworthy. These are in reality polyclinics—with milk-modifying kitchens attached—where babies are examined at regular intervals. The milk mixtures are ordered—and filled, at the institution—the food being either sold at cost or given gratuitously in appropriate cases.

Various observers,^{3, 4, 5} have called attention to the value of citrate of soda in the modification of cow's milk. It is noted that the addition of the salt—gr. 1 to 2 to the ounce of milk—makes the curds much more flocculent and easy of digestion. A noticeable feature is the large proportion of milk in the feeding that the infant will tolerate without evidences of gastric irritation, or the appearance of any considerable amount of undigested casein in the stools.

Additional evidence as to the value of buttermilk-feeding has also been given.^{6, 7} Abroad, the use of conserved buttermilk is steadily increasing.⁸ Buttermilk, artificially prepared by the addition of pure cultures of the lactic acid bacillus, has also come into use.⁹ The advantage of this food is that the fat is retained, so that there is offered an easily digestible whole milk. These so-called buttermilk tablets are now in the American market, also. Meyer¹⁰ advocates the use of pepsin and hydrochloric acid, in appropriate doses, for nurslings. It is of especial value at the time of weaning, in children with the so-called "exudative diathesis," and in the convalescence from the acute diseases of infancy. Terrien¹¹ recommends the use of malted broths (2-3 litre of water, 1-3 litre milk, 70.0 cream of rice, 50.0 of cane sugar), where milk is badly tolerated, particularly if there be tendency to gastrointestinal irritability. Very young infants do not do well on the mixture.

Hygiene—School Hygiene. Cronin,¹² in a paper on health of New York school children, emphasizes the importance of the prophylaxis of the communicable diseases. He believes that the Department of Health should so control conditions that adenoids, tonsils and teeth might be properly attended to before the child is accepted as a member of a school, and looked after, regularly, thereafter. He even takes the rather advanced position that the child population of each tenement house should be immunized against diphtheria, by prophylactic injections of antitoxin, where a case is reported. He is an earnest advocate of a thorough system of medical inspection of schools. The necessity for looking after the physical condition of school children most closely is frequently alluded to in the literature. On the other hand, Czerny¹³ thinks that the importance of school strain is exaggerated. People ascribe to school what is really due to home environment. He believes that the mental strain on the child before it enters school is intense, if it associates much

with adults. Adults answer a child's questions all day long, and rejoice in its inquiring mind. In this way the child grows out of its "childishness," and signs of neuropathy develop. The effectual remedy is to allow children to grow up in the companionship of children. Discussing the so called school anemia, Unruh¹⁴ ascribes to myocarditis (which he considers very common), albuminuria, or hypoplasia of the heart and great vessels, a large proportion of the cases generally ascribed to the school anemia alone. He urges repeated examinations of the heart, especially after the acute infections.

An interesting study of alcoholism in German school children was made by Hecker.¹⁵ Of 5,080 children examined, 33.7 per cent were abstainers, 55.3 per cent were moderate drinkers, 10.9 per cent were excessive drinkers. With increased use of alcohol came diminution in progress, in studies and in physical development.

Development.—Bovaird and Nicholl¹⁶ have made a careful study of the weights of the viscera in a series of 571 autopsies. They found that up to the fifth year there is a constant relation between the weights of the more important viscera, thus: The weight of the liver averages seven times that of the heart. The weight of the spleen averages one-tenth that of the liver. The weight of the kidney averages one-ninth that of the liver. They also find that the weight of the thymus, as commonly given, is excessive; that its average weight is six grammes, that there is no evidence of a growth of the thymus after birth under normal conditions, though under special conditions it may hypertrophy enormously.

Studying the relation of weight to the measurements of children during the first year, Fleischner¹⁷ finds that height and circumference of head, chest and abdomen increase as the weight in normal children, the greatest increase occurring in the first quarter of the year. In poorly nourished children, with weight below normal—all measurements are below normal. With stationary weight the increase in the measurements is very small—depending on the slight influence of age on the growth of these cases. The primary factor in the increase of measurements in the first year is the weight—the influence of the age being secondary.

Dentition.—Dunn¹⁸ believes that the commonest symptoms seen in dentition are *not* reflex but due to pain. They may arise from the tooth cutting the gum, or from irritation at the root of the tooth. The majority of symptoms attributed to a reflex irritation from the tooth are probably mere coincidence. There is a strong probability, based on clinical experience, that dentition may cause fever, disturbances of the ear and disturbances of digestion. It may possibly cause certain nervous disorders.

Diseases of the Newly Born.—The vitality of premature children. Ostreil,¹⁹ basing his observations on the literature and on examination of 1,542 premature children, accepts 44 cm. as the minimum height and 2,000 gm. as the minimum weight.

He is unable to find that these children showed less resisting powers in later life than children born at term. The morbidity and mortality during infancy and early childhood were not materially higher than those of ordinary children.

Specific Infectious Diseases.—Scarlet. Despite the work of many careful investigators, the definite etiological factor of scarlet has not been found. It would appear to be settled that the streptococcus group certainly plays an etiological role—perhaps only a secondary one. The investigations of Ruediger²⁰ are of interest in this connection. He found the *S. pyogenes* constantly in great numbers on the tonsils of patients suffering from scarlet before the inflammation of the throat had subsided.

Discussing the relation of oral sepsis to the severity of the attack, Hunter²¹ points out that the severity of the scarlet—that is to say of the septic complications, is greatly influenced by the degree of oral sepsis present. Thus, of cases without oral sepsis only 35 per cent had complications of moderate or severe degree, whereas of cases with oral sepsis, 65 per cent showed such complications. The severity of these complications was also much greater in the cases with oral sepsis. One aim of treatment should therefore be—to cleanse the throat as thoroughly and as early as possible. In this connection it may be noted that Solt²² reports excellent results from the use of throat compresses of 2 per cent sol. of salicylate spiritus. The effect on the adenopathy was very marked. With reference to treatment, Macrides²³ says that the disease is self-limited—and drugs are therefore useless, and may interfere with the kidneys. Treatment should aim to promote diuresis, and attenuate the toxic infection. This is to be accomplished by the use of tepid baths and artificial serum. He believes that antidiphtheritic serum may do harm.

On the other hand Lopez²⁴ says that in his experience early doses of antitoxin curtail suffering, lessen the risk to the patient and are absolutely without danger. There are no contraindications to its use. Saltykow²⁵ reviews the literature of the treatment of scarlet by antistreptococcic serum—adding some additional cases. He believes the Moser serum to be the best (this is a polyvalent serum), and is an earnest advocate of its use. He finds that, on the whole, it has produced very good results, and agrees with Escherich that the therapeutic value of the serum is not nearly well enough recognized.

As a prophylactic against scarlatinal nephritis Pater²⁶ recommends the use of a salt-free diet in scarlet. As soon as the fever has subsided, a diet of bread, rice, puree of potatoes, eggs—all without salt—with butter, light desserts and milk, is allowed. From his observations the author concludes that this liberal—but salt-free diet—is as safe as an absolute milk diet, and much more agreeable to the patient. This regimen, by strengthening the patient, shortens convalescence and puts the patient in better condition to withstand secondary infections or complications.

Diphtheria.—Sittler⁷⁷ is a warm advocate of prophylactic injections of antitoxin—especially in institutions. He finds that the period of immunity lasts from three to five weeks, that unimmunized children are more susceptible to diphtheria than children who have been immunized, that catarrhal affections of the mucous membranes predispose to the disease and shorten the period of immunity. The length of the immunization period is not increased by using doses larger than 500 units. Detot and Deguy⁷⁸ discuss one of the rarer complications of diphtheria—pleurisy. Purulent (streptococcus) pleurisy is always due to secondary infection. Serous pleurisy may occur—though rarely—independently of any diphtheritic infection. The ordinary modes of pleuritic infection are through the broncho-pulmonary system, the circulating system or through the mediastinum. Comby⁷⁹ reports three additional cases of diphtheritic paralysis cured by late injections of antitoxin. He believes that the antitoxin should be used in all cases of diphtheritic paralysis—whether the primary diphtheria was treated with antitoxin or not.

There appears to be a general consensus of opinion that the dosage of antitoxin is oftentimes too small.⁸⁰ The age of the patient is really not the best guide. The amount of membrane is of some value in determining the dose, still more important are the duration of the disease and the degree of toxæmia.

A single dose given at the beginning of the disease, will accomplish as much as two or three such doses given later. No harm can result from the use of the large doses. An average dose for tonsillar cases would be 3000 units—double that for laryngeal cases, repeated as necessary.

Rhodes⁸¹ urges the giving of the antitoxin at once—in large enough doses without waiting for the bacteriological diagnosis. He finds that the antitoxin is of great value in the treatment of non-diphtheritic anginas also. Bisson⁸² advocates the intravenous injection of the antitoxin, particularly in the severer (laryngeal) cases.

Meningitis.—Morse⁸³ analyzed 40 cases of meningitis occurring in infancy—the cases being about equally divided in number between the tubercular and cerebro-spinal forms. From his careful study of these cases in which the diagnosis was confirmed by the lumbar puncture or autopsy, Morse concludes that the picture of meningitis in infancy is different from that in childhood. The tubercular form has a more sudden onset and a shorter course than in later life. The symptomatology of both forms is the same at this age—though the symptoms of spinal irritation are somewhat more marked in the cerebro-spinal form. A positive diagnosis between the two forms is impossible from the symptomatology and can often be made, only by lumbar puncture. The puncture has no therapeutic value in the cerebro-spinal form, but is useful for the relief of symptoms in both forms.

Billings⁸⁴ has studied the cases—(numbering 2,755 in 1905) reported

in New York City in 1904 and 1905. The mortality in 1905 was 73.5 per cent. He finds that clinical investigation so far has thrown little light on the mode of transmission nor has any effectual method of treatment been discovered. It is altogether probable that the disease is most infectious during the first two weeks of its course. This finding is in accord with the researches of Bolduan and Goodwin³⁵ who found that the diplococcus meningitis was present in the nasal mucus in fully half the cases during the first week. They believe that the organism—though not the disease—is transmitted from the nasal secretion of one person to another. There appears to be no doubt but that the exciting cause is the *diplococcus intracellularis meningitidis*.³⁶ Koplik³⁷ calls attention to the value of percussion of the skull as an indicator for lumbar puncture—acute hydrocephalus caused by either form of meningitis may thus be detected. When the lateral ventricles are distended with serous fluid, the percussion note at a given spot varies with the position of the head. There is thus afforded a means of knowing when lumbar puncture—as a measure of relief for increased pressure effects, is needed.

Schlesinger³⁸ finds that by repeated lumbar puncture, it is possible to prevent convulsions in the tubercular form. He believes this measure to have distinct therapeutic value—and notes that five cases have been published in which recovery has occurred, although tubercle bacilli were found in the cerebro-spinal fluid.

With reference to treatment of the epidemic form Leszynsky³⁹ (who reports 30 cases with a mortality of 50 per cent) urges hot saline injections (rectal)—hot baths, cardiac stimulants, fresh air and repeated lumbar puncture. In one case the injection of 10 per cent lysol, injected into the spinal canal, appeared to have a good influence. Osborne⁴⁰ thinks that ergot, given intramuscularly or subcutaneously, is a very valuable therapeutic agent, and says that ice, ergot, and morphine will save many patients. Edlefsen⁴¹ recommends the use of iodic acid and its sodium salt (sodium iodate). Lumbar puncture and inunctions with silver salts are useful adjuvants.

Measles.—Chardin⁴² calls attention to the fact that relapses are not at all rare in measles. They may occur from five days to one month after the original attack, and last as long as the original attack. The form of the relapse is independent of that of the original attack and the relapse may be hæmorrhagic even though the original attack was not.

Pertussis.—The year has seen the usual list of "specifics" for whooping cough. Rothschild⁴³ was chloroforming a child for reduction of a congenital luxation of the hip. After the operation it was noticed that the pertussis, from which the child had been suffering, had disappeared. Thereupon, the author tried chloroform—by anaesthesia—in nine other cases—with excellent results. He says that this method of treatment is not original with him—and that good results had previously been reported.

Mumps.—Troitsky⁴⁴ reports thirty-three cases in girls, 13 of whom had complicating oophoritis. He calls attention to the fact that several writers have found atrophy of the ovaries after this inflammation—so that the complication has a sort of “sociologic importance.” With reference to the blood changes of mumps, Wile⁴⁵ finds that lymphocytosis—relative and absolute—is a constant concomitant and believes that it is a diagnostic point of value.

Influenza.—Clos⁴⁶ urges care of the oral mucous membrane in the influenza of childhood—on account of the frequency of adenopathy. The glands of the neck and the postpharyngeal glands are most often affected. This adenitis, accompanied by high fever, may constitute the dominant symptom of the malady—recalling the picture of glandular fever, which according to some authors is always an influenzal manifestation. The adenitis often revolves slowly and may end in suppuration—thus becoming the origin of a retropharyngeal abscess at times.

Habert⁴⁷ notes the frequency of convulsions in the influenza of childhood, the convulsions usually appearing at the height of the disease. Hot packs are highly recommended.

Escherich⁴⁸ reports excellent results from the instillation into the nares of five drop doses of pyocyanase (a proteolytic enzyme of *B. pyocyaneus*).

Typhoid.—Regis⁴⁹ reports as an early diagnostic sign a yellowish discoloration of the palms of the hands, and soles of the feet—perhaps as early manifestation of the toxæmia.

Miller⁵⁰ reports two cases showing that fæcal impaction may be the cause of serious abdominal symptoms in convalescence. In cases with persistent constipation enemata are not sufficient, and occasional laxatives should be used. In these cases exclusive milk diet is a mistake, and beef-juice, broths, milk with cereals and malt should be added. In these cases a liquid diarrhea, coming on suddenly, should excite the suspicion of fæcal impaction.

Chantemesse⁵¹ reports the result of five years use of his serum in typhoid. During this period, the average hospital mortality in children in Paris was 17.3 per cent. In the serum cases it was 3.7 per cent. There were no deaths in cases getting the serum in the first week—and no deaths from hæmorrhage. The serum is antitoxic and bactericidal—is used in small quantities and no bad effects have followed its use. Brunon⁵² and Josias⁵³ offer confirmatory testimony as to the value of this serum.

Glandular Fever.—Vipond⁵⁴ and Cheinisse⁵⁵ agree that glandular fever must be considered a clinical entity—a definite infection. The onset in children is usually sudden with torticollis, sore throat and constipation. The glands involved are those near the posterior margin of the sternocleido-mastoid. The principal differentiating features are the localization and evolution of the glandular affection, the lack of proportion between the throat manifestations and this glandular enlargement and the slight

tendency to suppuration. The axillary and inguinal glands are involved in most cases. Vipond recommends iced bichloride compresses locally.

Tuberculosis.—Concerning the origin of tuberculosis in infancy, Schlossman⁵⁶ takes the stand, based upon his experimental and pathological studies, that the infection is enterogenous rather than ærogenous, that infection occurs through the gastro-enteric rather than the respiratory tract. Though he insists upon the alimentary origin, he does not believe that the infection comes through cow's milk. Nor does it follow that tuberculosis of the intestinal tract must be the primary lesion, since it appears proven that tubercle bacilli can penetrate the healthy intestinal mucosa without the production of local lesion. Through the thoracic duct the bacilli get to the right heart, and so to the lungs—thence they come to the bronchial glands, which are particularly prone to tubercular infection. This view—that the bacilli are swallowed—getting to the respiratory tract secondarily, is also taken by Mathews.⁵⁷ It is noteworthy, however, that the weight of evidence seems to point more and more strongly to the inhalation theory of the origin of tuberculosis in infancy—though it is not to be questioned that there are undoubtedly cases of primary intestinal infection. Schlossman's view has not found acceptance in Germany—and his rather fanciful theory has been severely—and apparently successfully, attacked. In a general review of the subject of the mode and origin of the infection in early childhood, Hauser⁵⁸ claims that the weight of testimony is decidedly for the inhalation theory. His statistics show that 10 per cent of all children dying at the end of the first year show tuberculous lesions. The type of infantile tuberculosis is the lymphatic, with absence of primary effects. Pulmonary tuberculosis begins to be much more common in the second year.

With reference to diagnosis, Thomesco and Gracowski⁵⁹ report the results of their work with a modification of the agglutination test, as proposed by Arloing and Courmont. Their results were encouraging, though the difficulty of the technique as at present used would prevent the general adoption of the test. Salge and Schkarin⁶⁰ also obtained positive results with an agglutination test. Binswager⁶¹ recommends the tuberculin test as of especial diagnostic value in childhood. Carefully done, these injections are harmless, and in a very great degree reliable. Cruchet⁶² urges the examination of the stools of infants for the bacilli, using the method of Strassburger, which gives excellent results. The same author⁶² has an interesting detailed discussion of tubercular pneumothorax in children, while Lhomme⁶⁴ takes up the subject of tubercular cavities in the nursling.

The importance of prevention of tuberculosis in school children is everywhere insisted upon. In Germany and France, societies have been formed to take predisposed children to forest, mountain or seaside schools for instruction. The good results of this most excellent work are gen-

erally noted⁶⁵⁻⁶⁶. As Morse⁶⁷ says in discussing the protection of infants and young children: "What can be done as to the separation of the children from tubercular parents and as to the sanitation depends in each case upon the circumstances of the family and the provisions for the care of the tuberculous made by the public. That is to say, protection against tuberculosis is largely a question of money."

Ganghofner⁶⁸ reports very good results from the *therapeutic* use of tuberculin. He holds that in small doses tuberculin is without danger and feels that the treatment is worthy of an extended trial.

Syphilis.—Numerous observers report findings of the spirocheta pallida in the various viscera in cases of hereditary syphilis⁶⁹. Tobler⁷⁰ found pronounced lymphocytosis of the cerebro-spinal fluid in twelve out of fourteen cases of hereditary syphilis in infants. This may be a diagnostic sign of much value as it may appear before other symptoms. In a paper on cerebral syphilis in childhood, Fairbanks⁷¹ describes three forms, leptomeningitis, endarteritis, and syphilomata. The clinical phenomena are very complex. Among early symptoms are mentioned vertigo, speech disturbances, disturbances of vision and sudden syncope. The prognosis depends upon the early recognition of the nature of the trouble, of its pathological character and its prompt treatment. The arterial degenerations are the least easily influenced by treatment.

Rheumatism.—Bovaird⁷² is inclined to accept the specificity of the diplococcus rheumaticus as the exciting agent, though it is admitted that the chain of evidence is not quite complete. According to Snyder⁷³ the evidence is far from complete. In fact he maintains that in many cases the diplococcus is probably the terminal, or at least secondary, invader. While admitting that English authors have broadened our conception of rheumatism in childhood, it is questionable whether they have not stretched it too far. Snyder says that, bacteriologically, the connection between rheumatism, endocarditis, chorea and tonsilitis has not been proven, though many writers, among them Bovaird⁷⁴, insist that the connection has been amply demonstrated. In a statistical study of 129 cases Kephallinos⁷⁵ shows that polyarthrititis is rare during the first year, that the second and third years are almost exempt, though this is a period of decided growth; that the age of greatest incidence is from the fifth to fifteenth years. Familiar tendencies were present in 50 per cent of his cases—in 23 per cent there was tuberculosis in the parents. There is no seasonal influence as to the first attack. Of his cases 70 per cent developed endocarditis, 25 per cent chorea. With reference to the relation of chorea and rheumatism Poynton and Holmes⁷⁶ report three additional cases in which a diplococcus was found in the pia mater in cases of chorea that proved fatal. The organism was also found in parts of the brain in these cases. The authors conclude from this—and other studies, that chorea is a manifestation of acute rheumatism. Discussing acute

fatal chorea, Leante⁷⁷ says that in at least one-third of the cases the chorea is due to rheumatic infection. This fatal form shows all the characteristics—both as to symptomatology and course—of an acute infection. Thayer⁷⁸ analyzes 808 cases of chorea seen at Johns Hopkins Hospital. He finds that in 25 per cent of the out-patient and in 50 per cent of the ward cases, there was evidence of cardiac involvement. Cardiac involvement was somewhat more frequent in the cases with a history of polyarthritis. There would appear to be reason to believe that the presence of fever in otherwise uncomplicated chorea is in a large proportion of cases associated with a complicating endocarditis.

Diseases of the Digestive System.—Pyloric Stenosis. In 10,000 cases Heubner⁷⁹ saw 45 cases of pyloric stenosis—21 of these he was able to follow up. Only two ended fatally. Heubner believes this disease to be a congenital—pure functional gastric neurosis. In his studies he has never been able to convince himself that there existed in any case a true organic stenosis with hypertrophy of the musculature and connective tissue. With reference to treatment he advises long intervals between nursings—the feedings being as large as the child will take, warm abdominal compresses and opium and atropine by rectum. Operation is not considered, except as a last resort and never before the third month. Fisk⁸⁰ has collected the reported operative cases. They number 71—with 33 deaths (46.4 per cent). He believes in early operation. Fischer and Sturmdorff⁸¹ in discussing a case with early operation say that three stages should be recognized—spasm, spasm and hypertrophy, tumefaction and stenosis of the pylorus. In the first and second stages medical treatment is still of great value; in the third stage operation offers the only chance of relief.

Recurrent Vomiting.—Fischl⁸² says that in a certain percentage of cases recurrent vomiting is a manifestation of hysteria—reporting three such cases. Granfelt⁸³ insists that in some cases recurrent vomiting occurs as one symptom of chronic appendicitis particularly in those cases with strong adhesions. Dickinson⁸⁴ calls attention to the importance—and frequency—of nephritis as a complication of the severe cases. Under the name of “food fever” Smith⁸⁵ describes a form of alimentary fever coming on suddenly with signs of indigestion—lasting from several days to as many weeks. Nervous children of both sexes are affected and the attacks are apt to recur. Smith considers that some cases of cyclical vomiting belong to this category—the cases being some form of autointoxication or intestinal catarrh. Myers⁸⁶ reports good results from the use of bicarbonate of soda to stop the vomiting, while Vanot⁸⁷ recommends citrate of soda.

Dysentery.—Concerning the bacteriology of dysentery in infancy Auché and Campana⁸⁸, after careful clinical and bacteriological study, conclude that various types of the dysentery bacillus may be causative factors in

the different forms—though at present it is not possible to establish clinical types to conform to these various forms of bacillus. Vaillard and Dopter⁸⁰ report 90 cases of dysentery treated with antidysenteric serum—with 89 recoveries.

Peritonitis.—Pneumococcus Peritonitis. From their study of the literature and their own cases, Annand and Bowen⁸⁰ find that pneumococcus peritonitis is a condition often overlooked. In one-third of the cases the affection is secondary to a pneumococcic infection elsewhere—lungs, pleura and middle ear. Two-thirds of the cases are primary—infection coming from the bowel. In about half the cases the pus is encysted, and the diagnosis therefore easy. Under operation the prognosis in these cases is good—of course far better than in the other class of cases of diffuse peritonitis. Clogg⁸¹ reaches similar conclusions.

Diseases of the Respiratory System.—Pneumonia. Kephallinos⁸² found the knee-jerk absent in 50 per cent of 65 children with croupous pneumonia (Westphal's sign). In some cases the loss of the knee-jerk antedated all physical signs in the lungs. This sign may therefore be of diagnostic value in doubtful cases. It is noteworthy that the knee-jerk is never missed in typhoid, erysipelas or the acute exanthemata, so that it is not to be attributed merely to the fever.

Enlarged Bronchial Lymph Glands.—Various observers have called attention to the value of radioscopy in the diagnosis of enlarged bronchial lymph glands. Roux and Josserand⁸³ examined 588 children—119 cases showed signs of enlarged tracheo-bronchial glands; all of these cases showing apical lesions; 144 showed signs of enlarged glands without pulmonary lesion showing that the adenopathy—in many cases at least—is the primary lesion. The authors regard radioscopy as of great value in this diagnosis—especially as an adjuvant to other methods of physical examination. De la Camp⁸⁴ and Roederer⁸⁵ note that while normal glands do not give a shadow, inflamed glands do. Roederer advocates the therapeutic use of the x-rays in the treatment of enlarged bronchial glands. It is worth noting that Mouriquand⁸⁶ reports a case where an enormous packet of bronchial glands was discovered at autopsy. X-ray examination intra-vitam had been absolutely negative. Banet⁸⁷ lauds the use of x-ray as an aid to diagnosis in chest conditions in childhood.

Diseases of the Blood.—Anæmia Infantum Pseudo-Leukæmica. There is still much discussion as to whether or not this syndrome is to be classed as a definite disease. Flesch and Schlossberger⁸⁸ conclude that we must consider the condition as a distinct entity. It is a disease of early life, running a course like that of leukemia, with large splenic and hepatic tumor, and adenopathy, with oligocythemia, oligochromemia and leukocytosis. It is probable that the disease is to be classed as midway between a simple and a progressive pernicious anemia. The etiology is obscure, though it is not improbable that the process is a toxic origin.

Leukemia.—Weill⁹⁹ reports a case of a child of three, showing all the signs of scurvy until the blood examination cleared the diagnosis by showing the picture of a true lymphatic leukemia. Flesch¹⁰⁰ reports a case of myelogenous leukemia in a child, which by treatment with the x-ray was transformed to a lymphatic leukemia. He also reports two cases of lymphatic leukemia in which treatment by the x-ray was absolutely without avail.

Purpura Fulminans.—Audeoud¹⁰¹ reports a case of Henoch's purpura in a child of two and a half years, with sudden onset, generalized spread, and death in seventeen hours. Gaillard and Huertas¹⁰² report a similar case in a child of thirteen months, with death in forty-eight hours. Longely¹⁰³ reports the case of a girl of 15 years, tubercular, with three attacks of purpura within six months, in which the exhibition of adrenalin was followed by excellent results.

REFERENCES.

(All references are for the year 1906, unless otherwise stated.)

1. Holt, Archives of pediatrics, Nov.
2. Deutsch, Arch. de med. des Enf., Jan.
3. Shaw, Arch. of Ped., Mar.
4. Cottin, Jour. A. M. A., Oct. 6.
5. Vander Slice, Arch. of Ped., Aug.
6. Brehmer, Jahrbuch f. Kinderheilk., Jan.
7. Cantrowitz, Jahrbuch f. Kinderheilk., Jun.
8. Koeppe, Jahrbuch f. Kinderheilk., Apr.-May.
9. Nebel, Jahrbuch f. Kinderheilk., Jun.
10. Meyer, Ther. d. Gegenw., May.
11. Terrien, Rev. Mens. des Mal. de l'Enf., May.
12. Cronin, Arch. of Ped., Oct.
13. Czerny, Deutsch. Med. Woch., No. 17.
14. Unruh, Deutsch. Med. Woch., No. 41.
15. Hecker, Muench. Med. Woch., No. 12.
16. Bovaird and Nicholl, Arch. of Ped., Sept.
17. Fleischner, Arch. of Ped., Oct.
18. Dunn, Jour. A. M. A., July 7.
19. Ostrail, Monatschr. f. Geburtshilf. u. Gyn., Vol. 22, No. 1.
20. Ruediger, Jour. A. M. A., Oct. 13.
21. Hunter, Brit. Med. Jour., Feb. 24.
22. Solt, St. Petersb. Med. Woch., Mar. 4.
23. Macrides, Grece Med., Vol. 6, 21-24.
24. Lopez, Amer. Med., Jan. 27.
25. Saltykow, Arch. f. Kinderheilk., Vol. 44, 4-6.
26. Pater, Rev. Mens. des mal. de l'Enf., Apr.
27. Sittler, Jahrbuch f. Kinderheilk., Sept.
28. Deguy and Detot, Rev. Mens. des Mal. de l'Enf., Feb.
29. Comby, Arch. de Med. des Enf., Aug.
30. N. Y. Acad. of Med., Sect. on Ped., Arch. of Ped., Apr.
31. Rhodes, Brit. Med. Jour., Feb. 17.
32. Bisson, Lancet, Oct. 6.
33. Morse, Jour. A. M. A., Jun. 23.
34. Billings, Jour. A. M. A., Jun. 2.
35. Bolduan and Goodwin, Med. News, Dec. 30, 1905.
36. Robinson, Amer. Jour. Med. Sci., Apr.
37. Koplik, Med. Rec., Sept. 29.
38. Schlesinger, Berl. Klin. Woch., Vol. 53, No. 25.
39. Lezynsky, Med. Rec., Mar. 3.
40. Osborne, N. Y. Med. Jour., Feb. 17.
41. Edlefsen, Berl. Klin. Woch., Vol. 53, No. 5.

- 42 Chardin, These de Paris.
43. Rothschild, Clin. Infant, No. 2.
44. Troitsky, La Pediatria, Apr. 1.
45. Wile, Arch. of Ped., Sept.
46. Clos, These de Paris, 1905.
47. Habert, Arch. Med. des Enf., Feb.
48. Escherich, Wien. Klin. Woch., No. 25.
49. Regis, Med. Presse, July 4.
50. Miller Arch. of Ped., Jun.
51. Chantemesse, Gaz. Hop., Mar. 1.
52. Brunon, Bull. de l'Acad. de Med., 8-9.
53. Josias, Bull. de l'Acad. de med.
54. Vipond, Arch. of Ped., Jan.
55. Cheinisse, Semaine Med., Vol. 26, No. 25.
56. Schlossmann, Arch. f. Kinderheilk, Vol. 43, p. 99.
57. Mathews, Brit. Jour. Chil. Dis, Mar.
58. Hauser, Monatschr. f. Kinderheilk, Jun.
59. Thomesco and Gracowski, Arch. de Med. des Enf., Aug.
60. Salge and Schkarin, Jahrbuch f. Kinderheilk, Jan.
61. Binswanger, Arch. f. Kinderheilk, Vol. 43.
62. Cruchet, Rev. Mens des Mal de l'Enf., Dec., 1905.
63. Cruchet, Arch. de Med des Enf., Feb.
64. Lhomme, These de Paris.
65. Leroux, Arch. de Med. des Enf., Jan.
66. Mery, Arch. de Med. des Enf., Aug.
67. Morse, Amer. Jour. Med. Sci., Oct.
68. Ganghofner, Jahrbuch f. Kinderheilk, May.
69. Moncorvo, Arch. de Med. des Enf., Jan.
70. Tobler, Jahrbuch f. Kinderheilk, Vol. 64, No. 1.
71. Fairbanks Meeting of A. M. A., 1906, Sect. of Ped.
72. Bovaird, Arch. of Ped., Jan.
73. Snyder, Meeting of A. M. A., 1906, Sect. on Ped.
74. Bovaird, Arch. of Ped., Jan.
75. Kephallinos, Wien Med. Woch., No. 19.
76. Poynton and Holmes, Lancet, Oct. 13.
77. Leante, Rev. Mens des Mal. de l'Enf., Jun.
78. Thayer, Jour. A. M. A., Oct. 27.
79. Heubner, Ther. d. Gegenw., Oct.
80. Fisk, Amer. Med., July.
81. Fischer and Sturmdorff, Arch. of Ped., May.
82. Eischl, Rev. Mens. des Mal. de l'Enf., July.
83. Granfelt, These de Paris.
84. Dickinson, Brit. Jour. Chil. Dis., Mar.
85. Smith, Brit. Med. Jour., Feb. 10.
86. Myers, Arch. of Ped., July.
87. Variot, La Clin Infant, July
88. Aucho and Campana, Arch. de Med. des Enf., Sept. and Oct.
89. Vaillard and Dopter, Bull. de l'Acad. de Med., Vol. 70, 8-9.
90. Annand and Bowen, Lancet, No. 23.
91. Clogg, Brit. Jour. Chil. Dis., Nov.
92. Muench, Med. Woch., No. 30.
93. Roux and Jesserand, Rev. Mens des Mal. de l'Enf., Jan.
94. De la Camp, Med. Klinik., No. 1.
95. Roederer, These de Paris.
96. Mouriquand, Lyon Med., No. 10.
97. Barrett, Rev. Mens des Mal. de l'Enf., Mar.
98. Flesch and Schlossburger, Arch. f. Kinderheilk, Vol. 43, p. 294.
99. Weill, Lyon Med., No. 14.
100. Flesch, Deutsch Med. Woch, No. 16.
101. Audeoud, Rev. Med. de la Suisse Rom., Apr. 20.
102. Gaillard and Huertas, Gaz. de Mal. Inf., Apr. 20.
103. Longley, Brit. Med. Jour., Apr. 14

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

Physiology.—The question as to the influence, if any, of the ciliary ganglion on the production of the aqueous humor has been investigated by Landolt.¹ Claude Bernard stated that the removal of the ganglion arrested the formation of the aqueous. Landolt, experimenting on dogs, removed the ciliary ganglion from one orbit and subsequently tapped the anterior chamber of each eye. He found no appreciable difference in the rate of formation or quantity of aqueous in the two eyes, and hence concludes that removal of the ciliary ganglion does not, in any way, affect the formation of aqueous humor. The conception and localization of the loss of the pupil reflex to light is discussed by Bach,² who suggests the following definition of reflex immobility: "A pupil is reflexly immobile if it reacts neither directly nor indirectly to light nor to nervous or psychical stimulation, but contracts promptly and fully upon convergence." He holds that reflex immobility is produced by the absence of a tract which extends from the corpora quadrigemina to the medulla oblongata, or in some cases, transitorily, by irritation of an inhibitory centre lying there, and that the miosis is dependent upon the absence of sensory spinal tracts and the loss of psychical irritation from tracts which extend from the cerebrum to the medulla oblongata. The lid closure pupil reflex (Gifford-Galassi) was observed by Ballantyne³ in a young girl affected with chorea. In this case, the pupil contracted whenever the lids were spasmodically closed. The phenomenon is apparently without diagnostic significance and is probably to be ascribed to an associated action of the iris-sphincter and the orbicularis palpebrarum.

A new entopic phenomenon of the arterial pulse (pulsatile phosphene) has been described by Antonelli⁴ and Baslini.⁵ After moderate physical exercise in the dark, small luminous spots appear and disappear rhythmically before the open eyes. Antonelli states that the impression is that of a luminous pulse synchronous with the arterial beat. Baslini explains the phenomenon as an excitation of the retina from excessive pulsation of its arteries.

A study of the phenomena associated with the production of stationary waves by reflexion from plane surfaces has led Raehlmann⁶ to formulate a new theory for the purpose of explaining how the energy of light waves is transmitted to the sensory end organs in the retina. His paper is reviewed by P. J. Hay⁷ as follows: "It has hitherto been generally accepted that the waves of light pass through the layer of nerve fibres, then enter the region of rods and cones and are transmitted by the latter

to the conducting apparatus. Thus, apparently, the energy of light travels through the conducting layer and then acts in the receiving end organs in a direction opposite to the one in which it is transmitted to the former. On the other hand, the direction of transmission is steadily maintained in the case of all the other special senses, a law to which the retina also conforms. The outer segments of the rods and cones are much more highly refractile than the inner ones, and act as transmitters, in that they reflect the greater part of the light into the inner, the percipient segments, in the form of stationary waves. These vary in length according to whether the light is monochromatic, a mixture of two, or three, or more colors. In other words each color or mixture of colors is characterized by stationary waves peculiar to itself, having a fixed position in the inner segment, thus stimulating it in a certain definite manner."

Pathology and Bacteriology.—Our knowledge of the pathology of keratitis parenchymatosa has been enriched by Elschnig,⁸ who had the opportunity of examining, microscopically, a very typical case. He found division and proliferation of the corneal cells which lie in the normal or distended interlamellar spaces partly intermingled with leukocytes. These cells undergo, in some parts, a curious form of necrosis with absorption of the intervening lamellæ, while the process of final restitution again proceeds from the fixed cells which proliferate in the neighborhood of the necrotic foci. The new vessels which appear participate in the process, but more by supplying material for the building-up process and not by the production of connective tissue. These vessels are merely endothelial tubes which lie superficially along the whole periphery, but ramify into the deeper layers in the more central parts of the cornea. Elschnig concludes that corneal changes are certainly of primary origin, and due neither to syphilis nor to tuberculosis of the cornea, nor to affections of the endothelium of Descemet's membrane. The nature of the degenerative alterations of the fibres of the crystalline lens is now being investigated by Mlle. Trufesco,⁹ Her preliminary researches lead her to the following conclusions: In senile cataract there is a fatty degeneration of the crystalline fibres; at first the fat globules are in the interior of the fibres, later the fibres are separated into fibrillæ which subsequently disappear, and in the advanced stage there is a homogeneous mass interspersed with vacuoles. The vacuoles represent the spaces occupied by the fatty globules, and do not appear until these globules have been dissolved by reagents. Certain granular masses in the spaces between the separated fibres appear to be only fat globules. Fatty degeneration of the crystalline fibres is observed particularly toward the equator of the lens. There are probably several varieties of fat in the degenerated fibres.

Polati's¹⁰ examination of two very highly myopic eyes (M. higher than

30 D.) revealed such extreme thinning of the sclerotic that in places there was actually an interruption in continuity. The optic nerve was partially atrophic and was distinguished by the presence of numerous cavities (cavernous atrophy) and secondary proliferation of the glia. This type of optic atrophy has been found, so far, only in glaucoma.

The occurrence in highly myopic eyes of large venous trunks closely resembling vortex veins, but disappearing in the neighborhood of the disk, was first described by Schoute in 1898. These occur as large vessels, without lustre or reflex, lying behind the retinal vessels, and collect blood from a ramified system of broad trunks. The large trunk formed by the junction of these ramifications disappears at or near the edge of the disc. Coats¹¹ had the opportunity of examining such a system in a highly myopic eye, and came to the conclusion that chorio-vaginal veins were anatomically large veins which pass from the choroid into the nerve and course backward close under the pial sheath; that they were formed by the enlargement of anastomoses which normally occur in this situation, and that this enlargement constituted, in most cases, a collateral circulation to compensate for a hindrance to the exit of blood by the normal vortex veins.

Trousseau¹² gives a description of a tumor, about the size of an olive, extending from the caruncle to the corneal limbus. The overlying conjunctiva was traversed by large vessels. Microscopically, it proved to be a fibrous tumor of the submucous connective tissue. Trousseau can find no other instance of literature of such a tumor in this situation. Another rare condition—racemose neuroma associated with hydrophthalmus—is described by Rosenmeyer.¹³ The chief mass of the tumor was situated in the lid with bands extending into the orbit.

The bacteriology of the eye and its adnexa is yearly receiving more and more study. Our present knowledge of this subject has been thoroughly covered by the papers of G. S. Derby,¹⁴ Weeks,¹⁴ Shumway,¹⁴ Brown Pusey,¹⁴ and Thomson.¹⁴ Derby's paper, "The Bacteriology of the Eyelids," covers this branch of the subject exhaustively and contains a full bibliography. In this connection it is interesting to note that Wright's work on opsonins and the opsonic index has had a practical application in ophthalmology, especially in connection with recent work on phlyctenular conjunctivitis. Thus, Nias and Paton¹⁵ assert that true tuberculosis of the conjunctiva bears the same relation to phlyctenular conjunctivitis that lupus bears to erythema induratum, the one due to tubercle bacilli, the other presumably to tubercular toxins. Cases of tubercle may be divided into two classes: In the first there is a purely local infection, with no general systemic infection; this class is characterized by a persistently low index and the frequency of phlyctenular conjunctivitis. In the second class, periodic systemic infections take place, characterized by sudden rises of the index far above normal. As a result

of their investigation, the writers recommend the treatment by means of tuberculin of cases of persistently recurring phlyctenules with a low opsonic index.

Congenital anomalies.—A curious anomaly of the fundus (hitherto undescribed) is reported by Stark and v. Szily.¹⁶ At the region of and immediately surrounding the disk there appeared a deeply excavated, slightly oval area of about four disk diameters, surrounded by a halo. At the bottom of the excavation a normal disk could be seen. Ocular movements similar to those found normally in the ungulates are described by Phillips.¹⁷ His patient could maintain both eyes in normal binocular fixation. With either eye fixing straight ahead, he could turn the other out slowly and back again to double fixation. He was able to converge both eyes and move them simultaneously to extreme divergence. He could hold one eye in any position and fix the side of his nose with the other. There has never been diplopia, and both eyes are in focus at the same time. Extensive remnants of the fetal ocular vessels are described by Ruhmandl.¹⁸ He found in the vitreous a network of fine whitish threads and the remnants of two vessels branching off from a swelling in the stem of the artery, one upward and outward, one downward and inward.

Instruments and Apparatus.—A double safety ophthalmic drop bottle has been devised by Cooper.¹⁹ It possesses the very distinct advantage that it may be sterilized without removing the glass stopper or rubber nipple, and is so compact that the set of nine bottles, with spirit bottle and lamp, may easily be carried in the pocket. The unquestioned value of transillumination of the sclerotic as an aid to the differential diagnosis between idiopathic separation of the retina and that due to tumor has led to the construction of several transilluminators. Lange's²⁰ instrument consists of a hard rubber cylinder containing at one end a small electric glow lamp. The end of the rubber cylinder is capped by a nickeled clasp, into which is fixed a glass rod 5 cm. in length. The free end of the rod is slightly curved and terminates in a point 2 mm. in diameter. Another instrument which possesses many points of superiority has been devised by Wuerdemann.²¹ To the already existing methods of localizing foreign bodies in the eye and orbit by means of radiography is added a new method by Holth.²² Lead buttons affixed by sutures to the conjunctiva at the highest and lowest points of the cornea are used as guides. Two pictures are taken, one through the temples, the other occipito-frontal. The position of the foreign body is ascertained by direct measurement on the plates, allowance being made for the fact that, owing to their position with regard to the tube and the eye, the measurements on them exceed the real ones by one-tenth. The need of protecting the globe during the play of x-rays upon the adnexa for therapeutic purposes has led Van Duyse and De Nobe²³ to construct a shield consisting of "Paris

enamel," closely resembling an artificial eye. This is slipped into the sac in front of the eye. An improved hand electro-magnet is described by Parker.²⁴ While comparatively small, light and easily handled, it is more powerful than any hand magnet hitherto constructed. A unique feature is the construction of the ends of the tips. They are made concave or cup-shaped, thus to a large extent avoiding the "nipping off" of the metallic fragment as it is drawn through the sclera. A new punch for removing membranes from the postpupillary space in traumatic or secondary cataract has been devised by Stevenson,²⁵ who is also the inventor of a new advancement forceps and needleholder. A sterilizable lacrimal syringe is offered by Wilder.²⁶ It consists of a glass barrel with a piston wrapped with asbestos string. The form and construction of many eye instruments as found in the shops, has called forth considerable adverse criticism from Landolt,²⁷ who offers suggestions as to improved models. Every worker with the amblyoscope has experienced difficulty in varying the degree of illumination in the tubes to suit the exigencies of the individual case. To overcome this drawback, Black²⁸ has had constructed illuminating boxes, each containing a four-candle power lamp which are attached to the amblyoscope at the distal ends. A rheostat controls the illumination of each lamp. The need of an efficient binocular pupillometer seems to have been realized by Ohm.²⁹ By means of a system of prisms, the images of both pupils can be brought into juxtaposition and thus measured with the greatest accuracy. An instrument designed to facilitate the discovery of scotomata in glaucoma—a scotometer, so-called—is described by Priestley Smith.³⁰ Aubaret³¹ offers a new model of a campimeter, designed to supplement the hand test in the determination of the visual field.

Therapeutics.—The new local anesthetic—alypin—first brought to the notice of the ophthalmic world in 1905, has been the subject of much investigation, and seems to have found rather more favor than its immediate predecessor in the same field—stovaine. A somewhat adverse opinion is expressed by Landolt,³² who found that a four per cent solution combined with adrenaline 1-10000 was slower in action than cocaine, caused more smarting, and in some cases, at least, produced a dessication of the corneal epithelium. A number of papers dealing with serotherapy have appeared, and on the whole, the method seems to be gaining ground, especially in suppurative conditions of the lacrimal sac and anterior segment of the globe. Thus Blanco³³ reports the successful use, subconjunctivally and subcutaneously, of antistreptococcic serum in hypopion ulcer and in threatening suppuration after cataract extraction. Doyen's antistaphylococcic serum is believed by Darier³⁴ to have been of distinct help in a case of purulent dacryocystitis. Schwartz³⁵ reports a case of tubercular conjunctivitis completely cured by thirty-seven injections of Marmorek's antitubercular serum. A highly suggestive paper is

that by Reuchlin,³⁸ on his experience with Koch's tuberculin. Two cases of choroiditis and fourteen of iritis and cyclitis, the tuberculous nature of which had been determined by the preliminary injection of 1-2-3 mgm. of old tuberculin, were subjected to a systematic course of injections. His success should certainly stimulate further experimentation in the same direction. Dionin finds each year a wider application. Hinshelwood³⁷ finds a one per cent to two per cent solution of undoubted efficacy in relieving soreness and discomfort of the eyes so often present in neurotics, apart from any demonstrable disease of the eyes. He has also found it useful in the pain of eyestrain. Used in powder in conjunction with powdered atropine dusted into the conjunctival sac, it has been found of great service in breaking firm posterior synechiæ (von Arlt³⁸ and Foerster³⁹). While the various preparations of the suprarenal gland continue to find favor in ocular surgery, the conviction has been growing that such preparations are not only useless, but frequently harmful in inflammatory affections of the eye. To this statement there appears to be one notable exception, namely, spring catarrh. Perret, in 1901, called attention to the almost specific action of adrenalin in this disease, and Grimsdale⁴⁰ has confirmed this observation. The application of radium to trachoma has given results not wholly encouraging. Thielemann,⁴¹ who exposed one eye only, the fellow being untreated to serve as a control, concludes that radium causes follicles and granulations to disappear, leaving the epithelium comparatively unaffected. Birch-Hirschfeld⁴² found that, while the granulations disappeared for the time being, other granulations soon made their appearance. The disappearance of the masses under radium was confirmed microscopically. More successful were Mackenzie-Davidson's results in the treatment of rodent ulcer. He used 10 mgm. radium sealed in a glass tube, thus utilizing the beta and gamma rays and excluding the alpha rays. The tube was held immediately over the affected part. It was applied 20-40 minutes to one part of the ulcerated surface, then moved to another portion until the whole of the ulcerated area had been exposed. He reports a definite cure in twelve cases of rodent ulcer, one of recurrent epithelioma of the cheek, and one of mole on the face. The question of operation vs. radiotherapy in epitheliomata of the eyelids is again engaging the attention of many surgeons. It can hardly be denied that less roseate views regarding the efficacy of radiotherapy prevail today than five years ago. In Trousseau's⁴⁴ experience, the rays have produced good results in limited superficial epitheliomata, but have been far less efficient in true ulcerative spreading epitheliomata. In the light of our present knowledge, Trousseau favors operation as the method of choice, but hopes that, with improved technique and more accurate knowledge of indications, radiotherapy will eventually prove the better treatment. Other workers, however, are much more optimistic (Ring⁴⁴). Valude⁴⁵ succeeded in

curing two cases of blepharospasm of several years' duration by a series of injections of alcohol at the point of emergence of the facial nerve in the temporal bone. In the treatment of gonoblenorrhea, Bernheimer⁴⁶ advocates the use of airol powder. It appears to owe its beneficial effect to the formation of free iodine. Koster⁴⁷ advocates the use of a three to five per cent solution of chlorate of potassium in various inflammatory conditions, especially in chronic conjunctivitis with dryness, itching of the eye and a foam-like secretion at the angles. Terson⁴⁸ recommends the synthetically prepared guaiacol, especially in burns of the conjunctiva and tuberculosis of the superficial structures. Added to copper sulphate collyria, it renders the latter much less painful. It should be exhibited internally in ocular troubles associated with general tuberculous conditions.

In a statistical report on the use of argyrol, protargol and silver nitrate in ophthalmia neonatorum and gonorrheal ophthalmia of adults, Stan-dish⁴⁹ concludes that the modern silver preparations are efficient in the control of gonorrheal infection of the conjunctiva, and that they have greater bactericidal properties than the laboratory experiments upon other microorganisms would lead us to expect. He describes a method devised by Hussey, of the Massachusetts Charitable Eye and Ear Infirmary, for the continuous application of collyria, as argyrol, to the eye: After the skin in the neighborhood of the eye has been washed with alcohol, a kind of dam around the eye is constructed with putty and the argyrol is poured into the receptacle.

Wuerdemann⁵⁰ reiterates his belief in the efficacy of digital massage in the treatment of recent embolism of the retinal artery. Massage permits a flow of blood past the obstruction and keeps up the retinal nutrition until sufficient absorption of the clot has taken place. A method of treating trachoma by massaging the cocainized everted upper lids with boric acid (powdered), applied with a cotton wound probe, is suggested by Pratt.⁵¹ Roehmer⁵² has experimented with Bier's congestion hyperemia in certain diseases of the eye. Hyperemia of the eyes and head was produced by constricting the neck with an elastic band. No very conclusive results were obtained. In order to obviate the disagreeable neck-constriction, Hesse⁵³ produced a localized ocular hyperemia by adjusting a suction apparatus to the brow and cheek. Electrolysis, phototherapy and radiotherapy have been employed by Sulzer⁵⁴ to clear corneal opacities. He believes that electrolysis, combined with phototherapy, is the method of choice in corneal opacities. Sclerosis of the cornea is best influenced by phototherapy alone. In nervous subjects, phototherapy may be replaced by radiotherapy. Iridectomy in glaucoma simplex has given such extremely discouraging results that a spirit of therapeutic nihilism has taken possession of many ophthalmologists. That such an attitude is unjustifiable is shown by Posey,⁵⁵ who relates cases of this disease carried

along for years by the intelligent and persistent use of pilocarpin and eserine.

Operations.—Twenty-six prominent German, French and Dutch ophthalmic surgeons⁵⁵ have contributed an extraordinarily interesting symposium on cataract extraction. Each operator describes, in brief, his own particular maneuvers. The great majority follow classical methods, with individual modifications of no great importance. The methods of Trousseau and Czermak are, however, radically different. The former reduces his armamentarium to a single instrument—a Graefe knife—even dispensing with the speculum. Capsulotomy is performed as the knife is traversing the anterior chamber and the lens is expressed by the back of the knife applied to the lower part of the cornea. Czermak makes either a downward section without iridectomy or an upward section with iridectomy. The lens is then expressed into a subconjunctival pouch and delivered. A modified iridotomy (to replace the iridectomy of the combined operation) is proposed by Verhoeff.¹⁴ After button-holing the iris at its root, one blade of the iris scissors is passed behind the iris to the pupillary border and the tissue divided by a single snip. Much the same effect is attained by Stevenson,¹⁴ who, after withdrawal of the iris folded on itself, effects a sphincterotomy by a single snip of the scissors held vertically. A novel operative method for chronic glaucoma is described by Lagrange.⁵⁶ This operation has for its end to make safely a pervious cicatrix in the region of the canal of Schlemm without the least prolapse of the iris. After eserine, an incision is made in the sclera parallel to the upper edge of the cornea, freeing the filtration angle as exactly as possible. The instrument is rotated back, thus bevelling the sclera. A large conjunctival flap is cut, which is turned forward over the cornea. The small piece of sclera left attached to the cornea is then resected. Lastly is performed a large iridectomy (in two stages). After healing, a narrow line beneath the transparent conjunctiva represents the weakened portion of the sclera. In every instance this procedure has produced a cicatrix which allows of ready escape of the intraocular fluids. Cataract expression in the capsule (the Smith or East Indian operation) has come in for considerable adverse criticism. Maynard,⁵⁷ from an experience of 175 operations of this kind, is by no means willing to concur in the idea that the operation merits unqualified endorsement.

A modification of Antonelli's intermarginal operation for chalazion, with a view to avoiding hemorrhage into the lid tissues, is advanced by Baudoin.⁵⁸ He first punctures the chalazion with the galvano cautery, then expresses the contents with the fingers. A simple method of relieving ectropion, of whatever degree, is warmly advocated by Jocqs.⁵⁹ Three vertical lines of cauterization are drawn from the cul-de-sac to the free margin of the lid. The lid is then placed in proper position and the upper and lower lids temporarily united. A distinct advance in the treat-

ment of symblepharon has been made by Wilder,⁶⁴ who has devised as a support for his Thiersch grafts, metal plates coated with paraffine. A new method of operating in pannus is described by Primrose,⁶⁵ who severs, subconjunctivally, a conjunctival vessel adjacent to the vascularized portion of the cornea. The mechanical pressure and irritation of the extravasated blood sets up a localized inflammation, and thus causes obliteration of the pannus vessels. A modification of the ablation operation of total staphyloma of the cornea is proposed by Gonzalez.⁶¹ After division of the conjunctiva around the cornea, he dissects it back to the equator of the globe. Several needles are then passed through the base of the staphyloma within the corneal margin. After excision the needles are drawn through and tied and the conjunctiva is sutured in front of the corneal wound, thus forming an additional protection against escape of vitreous. Oliver⁶² has proposed a new single-stitch operation for advancement, the excellence of which can only properly be appreciated by perusing the author's original description.

Traumatisms.—The ocular catastrophes that may follow the injection of paraffine in cases of saddle-nose are discussed by Uthoff⁶³ and Rohmer. The former describes a case in which, three months after the injection of soft paraffine in the bridge of the nose, the lids of one eye became suddenly swollen and could not be opened spontaneously. The swelling was due to an inflammatory new formation of tissue secondary to the migration of paraffine into the lids. Rohmer⁶⁴ reports a case of thrombosis of the central vein following paraffine injections. The following precautions are deemed advisable: (1) The paraffine used should have a melting point of 41-42 C.; (2) pressure during injection should be avoided; (3) the injection should be made through a thick canula, to avoid piercing a vein; (4) injection of paraffine into the orbital veins may be avoided by compression at the angles of both eyes; (5) a small quantity (say 1 to 1.5 cc.) should be injected at one time. An investigation into certain varieties of nonmagnetic steel was undertaken by Snell.⁶⁵ This subject is of great interest to ophthalmic surgeons, in view of the futility of magnet operation, when steel of this character has penetrated within the eyeball. Especial interest attaches to the manganese alloy. When the manganese content reaches 12 per cent, the alloy is almost completely non-magnetic. The difficulties of localizing glass and stone within the eyeball by radiography are well known. Nevertheless, clinical experience and the results of experiments prove, according to Sweet,⁶⁶ that in many instances even small particles of these substances can be shown on the plate if the situation of the body permits the shadow to be cast free from that of the denser portions of the orbital bones. The best pictures are those obtained from lead glass which gives a shadow even more intense than iron and steel. Monthus⁶⁷ calls attention to the happy effect of tarsorrhaphy in certain injuries of the eyeball. The cases especially

adapted to this method are penetrating wounds of the sclero-corneal margin. Only the central portion of the lids is united, the occlusion being kept up for a fortnight at least. Contraindications to the procedure are foreign body within the globe, wounds of the lens in the adult, and an infective keratitis of rapid evolution.

Glaucoma.—A case of "tuberculous" glaucoma is reported by Hirschberg.⁶⁸ The usual symptoms were present including cupping of the disk. The vascular iris was occupied peripherally by greyish masses. A particle excised by iridectomy showed granulation tissue containing large numbers of epithelioid and giant cells. Glaucoma consecutive to contusion of the globe is discussed by Villard,⁶⁹ who reports three cases. The rarity of the affection is attested by the fact that there are only 24 cases in literature. The disease is not peculiar to any particular age and the pathogeny is uncertain. Obstruction of the suprachoroidal lymphatic spaces following a hyperemia and serous exudation of the choroid has the support of the only histologic examination so far made. Brav⁷⁰ notes the occurrence of acute glaucoma in a cataractous eye following the instillation of several drops of adrenaline.

Refraction and Optical Questions.—The clinical indications for yellow glasses in ophthalmology are discussed by Motais.⁷¹ The yellow should be of such a tint that by transmitted light it appears slightly orange, by reflected light, brownish. Such glasses increase the apparent illumination of objects and feel soft to the eyes. Analyses of the spectra of various tints of coloured glasses show that the violet end of the spectrum is shortened by all while the red end is unaltered. Motais concludes that the rays which irritate the retina are the chemical ones. Yellow glasses are indicated in cases of retinal hyperesthesia or of disease of the deeper tunics in which blue or smoked glasses are ordinarily used. They are also to be recommended for mountaineering and motoring. The influence of full correction on the progression of myopia and on detachment of the retina is discussed by Vacher and Baillart.⁷² Two groups of cases are considered. (1) Young myopes, without lesion in the back of the eye, who have full range of accommodation. (2) Older patients with atrophy of the ciliary muscle and possibly also lesions of the fundus in whom the power of accommodation is lessened. In the first group excessive convergence is best avoided by full correction and a proper working attitude. In the second, full correction will not be tolerated at once, but must be worked up to. The authors formulate the following rule: "Correct the total myopia in all cases in which it is less in dioptries than the age of the patient in years. If the contrary is the case, endeavor to arrive at a full correction gradually." A consideration of the late results (after 3-7 years) in 75 eyes operated for high-grade myopia leads Sidler-Huguenin⁷³ to the following conclusions: (1) Lens extraction cannot be regarded as a palliative in the progress of myopia and its

complications. (2) There is a definite risk associated with the operation which should be explained to the patient. (3) The same precautions need to be taken after as before operation to spare the eye. (4) Operation should only be recommended to patients who cannot get sufficient sight from glasses to follow their occupations. Stevens⁷⁴ describes a new phenomenon of color conversion. When a narrow strip of color surrounded by a large area of the complementary color is looked at fixedly, the color of the narrow strip will disappear and be replaced by that of the surrounding field. Stevens explains the phenomenon by chromatic aberration of the media and diffusion of the different colored rays owing to unequal accommodation. An elaborate historical research on the "Visual Acuity" beginning with the Arabs, Greeks and Persians is contributed by Pergens.⁷⁴

The universal use of homatropin as a cycloplegic preliminary to refraction lends interest to a report by Hotz⁷⁵ of almost fatal poisoning by a 2 per cent solution. The symptoms were headache, nausea, mental excitement, with subsequent unconsciousness, rapid pulse and slowed respirations. Recovery under stimulation.

Eyelids.—Priestley Smith⁷⁶ examined microscopically the lid margin in a case of congenital distichiasis, and found the Meibomian glands completely absent, their place being taken by hair follicles. An extraordinary example of retraction of the elevator muscles of the eyelids is recorded by Truc.⁷⁷ Both upper lids were drawn far up. The upper lid failed to follow the downward rotation of the globe and attempts at closing the eyes evoked slight motion of the lower lid only. Even during sleep the closure was imperfect. Truc exposed the upper border of the tarsus through a skin incision and freed it from its muscular attachments along its entire length, thus producing an accentuated ptosis and eventual cure.

Lachrymal Apparatus.—Giani⁷⁸ alludes to Fournier's doctrine that certain affections are "parasyphilitic" and by analogy proposes to employ the term "paragonorrhoeal" to certain of the developments of gonorrhoea. He relates a case of double dacryoadenitis occurring during the active stage of gonorrhoea. Gonococci were present in the urethral discharge but none could be found on the conjunctiva or in the material drawn from the lachrymal gland by exploratory puncture. The disease is ascribed to the toxins of the gonococcus.

Conjunctiva.—Trantas⁷⁹ describes a new and pathognomonic sign of vernal conjunctivitis, namely, the appearance of small round or oval spots of whitish or greyish white color which lie at various depths in the limbal excrescences. Under magnification they resemble colonies of microorganisms developed in a gelatine medium. Microscopically, they are found to be cystic cavities formed by the degeneration of the epithelial processes. A small tumor adherent to the rectus internus was found microscopically to be a necrotic cysticercus cellulosæ. The authors, Morton and Coats,⁸⁰

state that a systicercus in this situation is very rare. The subject of ante-partum ophthalmia is revived by Stephenson,⁸¹ who classifies all cases as such which develop within twenty-four hours after birth, a period too short for infection to have occurred during parturition. He believes the affection is far from uncommon, a contention borne out by his report of 17 new cases from his own and colleagues' observation. An instance of conjunctivitis following the instillation of a 4 per cent solution of euphthalmin is recorded by Kipp.⁸² The increasing frequency of injuries to the conjunctiva from the accidental introduction of aniline colors or substances containing aniline has led Vogt⁸³ to undertake a clinical and experimental research on the action of artificial aniline colors upon the conjunctiva. He concludes that (1) the acid, neutral, or mordant colors or those insoluble in water scarcely affect the conjunctiva. (2) Basic colors produce severe conjunctivitis which may terminate in panophthalmitis. (3) Experiments on rabbits show that the action of even the most caustic basic colors may be neutralized or destroyed by irrigation of the conjunctival sac with a 5 per cent solution of tannin. Water, sodium chloride, boric acid or sodium bicarbonate irrigation do more harm than good.

Cornea and Sclerotic.—In certain cases of buphthalmos, keratoconus intraocular tumors and progressive myopia—all conditions possessing in common the one feature of distension of the eyeball, clefts in Descemet's membrane may be found (Stephenson⁸⁴). With the corneal microscope they appear as double contoured, greyish lines which resemble cracks in ice or flaws in glass. They lie at or near the posterior surface of the cornea. The possibility of severe parenchymatous keratitis occurring after a trifling injury is well known. Ohm⁸⁵ notes the development of bilateral parenchymatous keratitis in an inherited syphilitic following injury to one cornea. The same condition arose in other patients free from inherited taint. An unusual association of interstitial keratitis—turning white of the eyelashes—is described in Stephenson.⁸⁶ Certain of the rarer infectious diseases of the cornea are discussed by Zur Nedden:⁸⁷ (1) The infectious marginal ulcer. This begins 1—1.5 mm. from the corneal margin as a delicate infiltration. A crescentic ulcer then forms which enlarges from its ends and by confluence with other ulcers. The organism is the Zur Nedden bacillus. Contrary to the findings of other observers this author has not noted the Morax Axenfeld bacillus as a cause of marginal ulcers. Corneal ulcers due to the bacillus duplex (type liquefaciens of Petit) were found in 4 cases. He believes that the Petit and Morax-Axenfeld bacilli are related, but not identical. (3) A unique observation is the occurrence in one case of the influenza bacillus as the cause of a deep, round central ulcer. Inouye⁸⁸ records a case of keratitis due to ingestion of large doses of antipyrin. Under the title "keratitis ex acne rosacea" Schirmer⁸⁹ describes a superficial relapsing inflammation of

the cornea resembling scrofulous keratitis. It coincides with acne rosacea and recurs with exacerbations of the latter.

Cataract.—Is there a causative connection between goitre and cataract? To answer this question Ruch⁹⁰ examined the records of the eye clinic at Berne where goitre exists in from 54 per cent to 90 per cent of all inhabitants. The proportion of cataract was only 3.9 per cent, which is actually less than the proportion in Germany where goitre is rare. While cataract patients often have some signs characteristic of arteriosclerosis it is certainly not proved that senile arteriosclerosis is a cause of cataract. Meo⁹¹ found that out of 56 individuals with cataract, tension was above normal in 4 only. Practically the study of arterial tension is useful as showing the probability of post operative hemorrhage. Cataract following grave pernicious malaria is recorded by Cosmettatos,⁹² who ascribes the lenticular change to defective nutrition. A peculiar variety of partial stationary congenital cataract occurring in 20 persons in 4 generations of one family, is recorded by Nettelship and Ogilvie.⁹³ The lenticular anomaly consisted of a circular homogeneous thin layer situated between the nucleus and the posterior pole. Re-examination of certain of these cases after a lapse of several years showed that no change had taken place. The claims of Verdereau as to the efficacy of subconjunctival injections of potassium iodide as a cure for cataract (see Review of Ophthalmology for 1905) have not been verified by other observers. Menacho⁹⁴ in a critical review of Verdereau's work believes that the cures cited by the latter were simply instances of the well-known variability of the cataractous changes.

Choroid and Vitreous.—A patient of de Segalowitz⁹⁵ exhibited the following peculiar abnormality of the fundus: To the outer side of the macula and a little above lay a large mass of deep black pigment lying between two branches of the superior temporal vein. It lay beneath the retina. A short distance to the outer side of it there was a second sickle-shaped pigmented area with the concavity turned toward the first, and in the neighborhood were 24 other smaller masses placed underneath the retinal vessels. The spots were regarded as primary naevi of the choroid. Under the title "Excrescences of the ora serrata" Trantas⁹⁶ describes white or golden yellow threads projecting 2—5 mm. into the vitreous. They usually terminate in a globular swelling which reflects light more strongly than the thread. This appearance was visible in 26 out of 130 patients examined. In order to bring them into view, pressure must be made on the periphery of the fundus. At present 4 groups of amaurosis in infants are recognized: (1) Acute cerebral amaurosis of infancy (Gay). (2) Post convulsive amaurosis (Ashby and Stephenson). (3) Amaurotic family idiocy (Tay and Sachs). (4) Post meningitic amaurosis due to organic changes in the optic papilla. Stephenson⁹⁷ believes that a fifth group should be added to include a form of amblyopia consequent

upon inherited syphilis. He has frequently noted in infants undoubtedly syphilitic opacities in the vitreous, due remotely to a specific inflammation of the choroid or retina or both. Great improvement or cure took place under specific treatment. Paton and Paramore⁹⁸ examined the blood by Dr. Wright's method in 3 cases of vitreous hemorrhage. They found that coagulation occurred faster than normal and that the proportion of calcium salts was higher than normal. These observations suggest that it is wrong to treat intravitreal hemorrhage with calcium salts and that the administration of drugs capable of reducing the calcium content, such as citric acid, would be more in accordance with the results obtained from analysis of the blood.

Retina.—The etiology of the formation of "holes" in the macula is the subject of an interesting paper by Ries.⁹⁹ He cites 4 cases of which 3 were traumatic. Although traumatism is the most frequent cause of this condition it is not the only one. Any condition accompanied by a severe edema of the retina may cause an atrophy of this, the thinnest and most vulnerable part. The prognosis and treatment of glioma of the retina is very carefully considered by Rochon Duvigneaud.¹⁰⁰ He dwells especially on the indications for exenteration of the orbit as against simple enucleation. He is convinced that "the great majority of gliomas, if taken to the operator early enough can be definitely cured by immediate and histologically complete intervention." If, after enucleation, it is found that the nerve has preserved its white colour and normal volume the prognosis is good and enucleation may suffice. If the nerve is small and atrophic, even though it appears free from tumor tissue, the orbit should be cleared out. Exenteration is demanded when the nerve is increased in size and lardaceous in appearance, or if it presents a grey core of infiltration. Two unusual cases of obstruction of the central artery with escape of the papillo-macular area are recorded by Grafenberg.¹⁰¹ In both cases what appeared to be a cilio-retinal vessel took part in the general shrinkage of the arteries. The area was probably partly supplied by small cilio-retinal twigs invisible to the ophthalmoscope. Its color became indistinguishable from that of the rest of the fundus but its function remained. Harbridge¹⁰² had the rare opportunity of observing, ophthalmoscopically, a spasm of the central retinal artery. The attack was ushered in by dilatation of the pupil, the inferior temporal artery gradually diminished in calibre (followed quickly by the inferior nasal and superior nasal) and then completely collapsed. Immediately thereafter the veins, beginning with the inferior temporal underwent a similar change. The disc became pale and a faint haze spread over the entire retina. The restoration of circulation was first noted in the arteries. During the attack, vision failed to complete blindness and did not return until after the restoration of the circulation. A somewhat similar case is described by Lundie.¹⁰³

Optic Nerve.—By means of Bjerrum's screen, Ramsay and Sutherland¹⁰⁴ have observed a vertical elongation of the blind spot in cases of congestion of the nerve head in eyes with signs of sympathetic irritation. After enucleation of the offending eye the blind spot resumed its normal size. The authors believe it highly probable that the spindle-like enlargement of the blind spot denotes active congestion of the optic disk, the shape being determined by increased size and turgescence in the superior and inferior branches of the retinal artery and vein, and further that the enlargement may furnish an important and valuable danger-signal of the approach of sympathetic inflammation. Hotz¹⁰⁵ describes a case of amaurosis caused by the ingestion of 130 grains of antipyrin in 48 hours. Central vision was completely abolished and the peripheral reduced to finger counting. Vision was finally completely restored under pilocarpin subcutaneously and iron. Under the title "Inflammatory affection of the ciliary ganglion associated with optic neuritis" Hay¹⁰⁶ describes a condition of which he can find no reference in the literature. In addition to the signs of retrobulbar neuritis, Hay's patient had a dilated and fixed pupil and partial corneal anesthesia. Inflammation of the ciliary ganglion is held responsible for the paralysis of the sphincter and the corneal anesthesia.

Muscles and Squint.—Rochon-Duvigneaud and Onfray¹⁰⁷ observed a case of bilateral chronic exophthalmus caused by tubercular sclerosis of the intraorbital muscles. The patient was a male of 62 with arteriosclerosis and mitral insufficiency. Increasing exophthalmus led to ulceration of the cornea. Death took place 20 months after the eyes became affected. On sectioning the orbital contents the muscles were found to be four times the normal size. In one rectus were found two typical miliary tubercles, one situated within the muscular fibres and the other within the aponeurosis. A sclerotic process affected the interstitial connective tissue. Tubercle bacilli could not be found. The authors believe that the case is absolutely unique. An investigation of the light sense in over 1,000 cases of convergent strabismus has convinced Mackay¹⁰⁸ that the condition of the light sense is not responsible for squint or amblyopia. Layton¹⁰⁹ reports a case of isolated influenzal neuritis of the abducens peripheral to the sphenoidal fissure. High hyperphoria resulting from a band of the left inferior rectus limiting the upward rotation of the globe is described by Colburn.¹¹⁰ After division of the muscle it was reattached to the globe and complete recovery followed.

Orbit and Globe.—Two observers—Meding¹¹¹ and Snow¹¹²—have commented upon the comparative frequency of retrobulbar hematoma in infantile scurvy. Recovery occurs under proper hygiene and diet. A very unusual case of traumatic enophthalmus is reported by Pasetti.¹¹³ When the patient bent forward the eyeball protruded, and compression of the jugular produced a similar effect.

Relations with Medicine.—Autointoxication in relation to ocular disease, a subject hitherto little considered, received attention from a number of workers, notably de Schweinitz¹¹⁴ and Elschnig.¹¹⁴ The type especially studied has been autointoxication of enterogenic origin. The most definite sign of gastrointestinal autointoxication is the presence of phenol and other ethereal sulphates in the urine. Practically the presence of indican in increased amount means decomposition of albumin in the digestive tract and may be taken as an indication of this type of autointoxication. Paralysis of the internal and external eye muscles, marginal corneal ulcers, relapsing scleritis and episcleritis, chronic iridocyclitis and recurrent iritis, iridocyclitis following operations, glaucoma, cataract and recurrent styles are some of the ocular conditions that may be dependent upon an enterogenous autointoxication. Antonelli,¹¹⁵ in discussing the so-called "rheumatic" affections of the eye, concludes that we should avoid the vague term "rheumatic" as applied to various ocular diseases and seek the true cause which will often be found in an autointoxication. Under the title: "What are the so-called reflexes than can properly be referred to eyestrain," Howe¹¹⁶ discusses the extravagant claims of certain ophthalmic visionaries that eyestrain can justly be considered a cause of a host of organic ocular and general disorders (including keratitis, iritis, glaucoma, cataract, sinus diseases, pharyngitis, influenza, tuberculosis, pneumonia, etc., etc.) and proves conclusively that these claims are not verified by the experience of American ophthalmic practitioners. A case reported by Bronner¹¹⁷ shows in a striking manner the necessity of caution in the interpretation of results after glasses have been put on. A young man suffering from headache, inability to use the eyes and loss of weight was given glasses by an optician for a supposed compound myopic astigmatism. Shortly after beginning to wear the glasses his headaches disappeared, he could again use his eyes with freedom and in a short time he had gained considerably in weight. Examination by Bronner showed that the patient's refraction was emmetropic. In other words, the wearing of wholly incorrect glasses had been followed by the disappearance of the patient's symptoms.

A clinical study of Lepra Ophthalmia is contributed by Grossman,¹¹⁸ whose observations were made at the Leper Hospital at Langarnes, Iceland. The progress of the disease was found to be more rapid and more pernicious in the nodular form both generally and as far as the eye was concerned. In lepra tuberosa the eyes were affected in all cases; in lepra anethetica the eyes may remain unaffected if the nerves supplying the adnexa of the eyes remain free. Todd¹¹⁹ describes a case of complete resorption of pannus trachomatous occurring in the course of typhoid fever. During the typhoid fever attack all local treatment was stopped. The pannus cleared completely in two weeks. It is thought that the typhoid toxin caused a diffuse endothelial proliferation and that these

cells then became actively phagocytic, taking up the red blood cells and lymphocytes, and may have been capable of removing foreign tissue from the cornea. A new eye symptom in Graves' disease is described by Gifford,¹²⁰ namely, a marked involuntary resistance to eversion of the upper lid. It is an early sign and bears no realization to the amount of exophthalmus and tends to disappear with the development of the disease. It is assumed to be due to the hyperexcitability of Mueller's muscle through sympathetic irritation.

Eye and Nose.—Gibson¹²¹ emphasizes the important role of nasal obstruction as a cause of "pseudo-myopia." He has repeatedly observed that, following removal of adenoids, young hyperopes can relinquish their glasses, are in fact more comfortable without them. He believes that the excessive accommodation comes as the result of constant excess effort required in breathing through an obstructed nose—of the nature, in fact, of an overflow stimulus from the respiratory centre. An unusual case is recorded by N. M. Black¹²² in which frontal sinusitis gave rise to retrobulbar neuritis.

New Books.—Among the books of the year are the following: "Elementary Handbook on the Practice of Sight Testing and the Choice of Spectacles," by Scrini and Fortin; "Dictionary of Ophthalmic Terms," by Gros; "A Manual of Diseases of the Eye," by May and Worth; "The Ophthalmoscope and How to Use It," by Jas. Thorington; "The Eye and the Nervous System," edited by Posey and Spiller; "The Employment of Alkaloids in Oily Solution," by Scrini; "Eye Remedies," by H. Snel len, Jr.; "Photocopy," by M. D. Stevenson; "The Ophthalmic Year Book for 1905," by De Schweinitz and Jackson; "Squint. Etiology, Consequences and Treatment," by Schoen; "Guide to the Examination of the Eyes in General Disease," by Heine.

Deaths.—Death has been busy in the ranks of eminent ophthalmologists in the past year. A partial list includes Burnett, De Wecker, Hosch, Sachs alber, Rogman, Roche, Murdoch, Gelpke, Spencer Watson, Rymowicz, Czermak and last but not least, Hermann Cohn.

REFERENCES

(ALL REFERENCES ARE FOR 1906 UNLESS OTHERWISE SPECIFIED.)

1. Arch. d'ophthalm., March.
2. Die Ophthalm. Klinik, June 22.
3. Ophthalmoscope, February.
4. La Clin. Ophthalm., March 10.
5. Arch d'ophthalm., February.
6. Ophthalm. Klinik, April 5.
7. Ophthalmoscope, October.
8. v. Graefe's Archiv., January 21.
9. Ann. d'œulist., April.
10. Klin. Monatsbl. f. Augenh., January.
11. Oph. Review, April.
12. Ann. d'oculist., March.

13. Centralbl. f. Augenh., p. 70.
14. Trans. Sec. Ophthalm. Am. Med. Assoc.
15. Trans. Oph. Soc. Unit. Kingdom, November 9, 1905.
16. Klin. Monatsbl. f. Augenh., January.
17. Am. Med., March 24.
18. Zeitschr. f. Augenh., XV., p. 245.
19. Ophthalmoscope, March.
20. Klin. Monatsbl. f. Augenh., May.
21. Oph. Rec., May.
22. Ann. d'oculist., December, 1905.
23. Rev. gen. d'ophtalm., XXV., 1.
24. Ophthalmoscope, August.
25. Ophthalmology, January.
26. Oph. Rec., January.
27. Arch. d'ophtalm., May.
28. Oph. Rec., February.
29. Centralbl. f. Augenh., p. 129.
30. Oph. Review, May.
31. Arch. d'ophtalm., November.
32. Woch. f. Ther. u. Hyg. d. Aug., January 18.
33. Arch. de Oftalm. Hisp-Amer., October, 1905.
34. La Clin. Ophtalm., October 25, 1905.
35. Wien. Klin. Ther. Woch., January 7.
36. Klin. Monatsbl. f. Augenh., April-May.
37. Brit. Med. Jour., May 12.
38. Woch. f. Ther. u. Hyg. d. Aug., December 28, 1905.
39. Woch. f. Ther. u. Hyg. d. Aug., February 15.
40. Ophthalmoscope, July.
41. Zeitschr. f. Augenh., December, 1905.
42. Klin. Monatsbl. f. Augenh., December, 1905.
43. Oph. Review, June, p. 188.
44. Ann. d'oculist., January.
45. Ann. d'oculist, December, 1905.
46. Klin. Monatsbl. f. Augenh., February-March.
47. Ned. Tijdschrift voor Geneeskunde, I, 16.
48. Die Ophthalm. Klinik, January 30.
49. Oph. Rec., August.
50. Am. Jour. Ophthalm., January.
51. Oph. Rec., January.
52. Wien. Med. Woch., April 21.
53. Centralbl. f. Augenh., p. 167.
54. Ann. d'oculist., November.
55. La Clin. Ophtalm., February 10-25.
56. Arch. d'ophtalm., August.
57. Oph. Review, August.
58. La Clin. Ophtalm., November 25, 1905.
59. La Clin. Ophtalm., XII., 6.
60. Lancet, April 21.
61. Anal. de Oftalm., November, 1905.
62. Ophthalmology, January.
63. Postgraduate, January.
64. Wien. Klin. Ther. Wochenschr., January 28.
65. Oph. Review, August, p. 250.
66. Ophthalmology, July.
67. Arch. d'ophtalm., January.
68. Centralbl. f. Prakt. Augenh., November, 1905.
69. Ann. d'oculist., October, 1905.
70. Am. Med., July.
71. L'Ophtalm. provinciale, May.
72. Ann. d'oculist., November, 1905.
73. Correspondenzbl. f. Schweiz. Aerzte., June 1.
74. Ann. d'oculist., January.

75. Oph. Rec., December, 1905.
76. Brit. Med. Jour., July 21.
77. Ann. d'oculist., June.
78. Rivista Italiana di Ottalm., August.
79. Arch. d'ophtalm., December, 1905.
80. Oph. Review, March.
81. Ophthalmoscope, April.
82. Ophthalmology, January.
83. Arch. d'ophtalm., April.
84. Ophthalmoscope, June.
85. Woch. f. Ther. u. Hyg. d. Aug., November 2, 1905.
86. Ophthalmoscope, February.
87. Klin. Monatsbl. f. Augenh., June.
88. Ophthalmology, July.
89. Zeitschr. f. Augenh., XV., p. 501.
90. Rev. gen. d'ophtalm., January.
91. Rev. gen. d'ophtalm., December, 1905.
92. La Clin. Ophthalm., April 10.
93. Lancet, June 30.
94. Arch. de Oftalm. Hisp. Amer., June.
95. Die Ophthalm. Klinik, May 10.
96. Die. Ophthalm. Klinik, June 22.
97. Ophthalmoscope, September.
98. Lancet, October 28, 1905.
99. Zeitschr. f. Augenh., January.
100. La Clin. Ophtalm., March 25.
101. Arch. f. Augenh., April.
102. Opnthalmology, July.
103. Oph. Review, May.
104. Oph. Review, January.
105. Arch. of Ophthalm., II-III.
106. Ophthalmoscope, November, 1905.
107. Arch. d'ophtalm., March.
108. Brit. Med. Jour., December 23, 1905.
109. Jour. A. M. A., July 28.
110. Oph. Review, June.
111. Arch. of Ophthalm., November, 1905.
112. Arch. of Pediatrics, No. 8, 1905.
113. Ann. di Ottalm., 5-6.
114. Klin. Montasbl. f. Augenh., November, 1905.
115. Arch d'ophtalm., June.
116. Ophthalmology, January.
117. Abstr. Ann. d'oculist., November, p. 400.
118. Brit. Med. Jour., January 6.
119. Oph. Rec., January.
120. Oph. Rec., June.
121. Austral. Med. Gaz., March.
122. N. Y. Med. Jour., June 2.

ORTHOPEDIC SURGERY.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

Diseases of the Joints.—Since the beginning made by Brodie in 1818 to classify and describe the class of cases afflicted with joint-disease, many observers have taken a hand towards simplifying our understanding of these conditions. It is only within the last few years that any definite results have been realized in establishing a modern pathology and clinical classification for these affections. The confusion of terms resulting from this work has done much to mystify the casual observer. Within the last year, several attempts have been made to clear up this chaos, and to place our knowledge in some rational form, that it may be understood and easily grasped by all. Marsh¹ has pointed out the necessity of not mistaking symptoms for diseases and effects for causes. He dwells upon the importance played by infection in the production of many of these joint lesions. Following up the illustration furnished by the pneumococcus, an organism first discovered in the lung in cases of lobar-pneumonia, but met with in the joints as a definite cause of arthritis, he is inclined to classify the various examples of infectious arthritis under three heads; the first of which has been long familiar as an arthritis following direct infection of a joint by a wound, or occurring in the progress of an acute infective osteomyelitis or pyemia. The second class follows specific fevers, such as acute rheumatism, scarlet-fever, typhoid, influenza, or dysentery. This class is readily grasped, and its association with the acute disease is usually at once obvious. The third group is one of great clinical significance, in that it includes cases which are apt to lead to serious oversight or mistakes. The infection here, is produced by such every-day agents as the streptococcus, the staphylococcus and the gonococcus; but the symptoms and occurrence of joint involvement are of such a character, and take place at such a time that the association with the original infection is apt to be undetected. This he regards as being particularly the case where the gonococcus is the agent, and he shows in illustration of this point that the arthritis developed may be of two varieties, one occurring in the acute attack of the disease, and evidenced by rapid effusion, surface heat, severe pain and general illness; the other where the virulence of the organism is dwindling towards extinction, and is probably growing in company with some other bacterial element, producing a grade of arthritis of distinctly sub-acute variety, evidenced by slowly increasing swelling, slight pain unless the joint is

actively used, marked stiffness, and the muscular wasting which invariably accompanies chronic arthritis. This variety presents a picture clinically closely resembling that seen in tuberculous diseases. Aside from the gonococcus, the form of septic arthritis resulting from the invasion of the staphylococcus may be derived from many sources. A septic process existing in any organ or part of the body may give rise to this form of joint affection. The part played by the tonsils, by necrosed teeth, or by chronic bronchiectasis has been sufficiently demonstrated. He calls attention to the danger of overlooking these primary seats of infection, and attributing the joint condition to a mild form of rheumatism. Nathan² has grouped this class of cases under the term "infectious polyarthritis," and has pointed out that at times the general symptoms of the infection may be so mild that they are probably overlooked altogether, but that in others there is severe toxemia, or bacticemia, evidenced by marked constitutional reaction. The course after the initial acute joint symptom appears, depends upon the damage done to the affected joint, and upon the continued presence of the invading organism. Where no definite infection as a primary cause can be made out, he is inclined to the belief that there are two forms of metabolic joint-disease, which would fall clinically under what has been frequently described as rheumatoid arthritis, an arteriosclerotic form, and an autotoxic form. These two classes are represented by no distinct clinical or pathological condition, and are not due to bacterial invasion of the joint. He does not associate the affection thus classified in any way with rheumatism, but believes that one class is due to metabolic conditions, and that the other results from arterial changes of a senile character, both resulting in stiffening and deformity of the joints. Schueller³ has again stated his opinion that the disease called polyarthritis chronica villosa is caused by a dumb-bell shaped bacillus. His opinion has not been verified by any other observers. McCrae,⁴ taking typhoid-fever as an example, and pointing out that the typhoid bacillus, or the paratyphoid bacillus, may cause spondylitis, with or without changes in the vertebrae, suggests a list of infectious diseases which have been reported as causing definite joint lesions. This list includes scarlet-fever, measles, influenza, septicemia, pyemia, phlegmon, pneumonia, pustular acne, purpura and scurvy. He also suggests the thought that some of the reports of joint conditions following acute rheumatism may have been instances of acute arthritis wrongly diagnosed. He points out that the spondylitis resulting from typhoid-fever suggests that arthritis deformans may be due to various infective agents. Elliott⁵ has simplified the classification of the chronic arthritides of the spine by dividing them into two main groups. The first of these he calls *ostitis deformans*, and characterizes

it as follows: "A painless, deforming, passive, osteophitic, new bone formation, secondarily produced and degenerative in character." This class of disease occurs in those of advanced age, who have led lives of exposure, and done work subjecting the individual to constant traumatism. It is associated with arterial sclerosis, and does not cause symptoms. There is exostosis and bridge formation, with loss of intervertebral substance. The second class he designates "chronic ankylotic inflammation of the spine," which presents an active symptom complex, affecting subjects in young adult life, characterized by increasing vertebral rigidity, with or without root symptoms, and often with involvement of large and small joints of the extremities, tending towards complete bony ankylosis of the vertebral column. Under these two heads, after a complete review of the literature, and the tabulation of 51 cases, he is of the opinion that all the cases of true spine rigidity may be grouped. The Becterev type, the spondylose rhizomelique of Strumpell-Marie, he believes to be simply variations in degree of chronic ankylotic inflammation of the spine. Traumatic spinal rigidity, as well as muscular spinal rigidity, may be easily differentiated from the cases where there is definite bone change, by the use of an anesthetic. Marie,⁶ in a description of the condition described by him as spondylose rhizomelique, states that it is undoubtedly a condition of infectious origin, or of toxemia due to infection, resulting in its tendency to ligamentous ossification and complete ankylosis of the spine, with involvement usually of one or more of the larger joints. His work is based upon several carefully observed autopsies.

From these observations, it is possible to make the following conclusions: That all joint diseases can be naturally divided into two grand classes:

- (1) Where the process primarily begins in the intra-articular membranes;
- (2) Where the bone is primarily involved.

We may conclude that very many of the cases formerly described under the head of rheumatoid arthritis are of infectious origin, and are due to the invasion of the joint by some definite bacterial agent brought thither by the circulation, or lymphatics, from a primary focus situate elsewhere in the body. We may conclude also that there is still a class of chronic arthritides presenting variable clinical pictures, which are the result of metabolic or arteriosclerotic changes in the individual.

The work that has been accomplished in the last year in this field of endeavor is of the most encouraging sort, in that the tendency, so long evidenced, of establishing new disease entities, has given way to an almost universal desire to collect under as few heads as

possible the differing clinical descriptions, and to assign to each a definite pathology.

Intermittent Limping.—Lovett⁷ has described three cases of this affection, which is a rare condition in America, but of more frequent occurrence in Russia, Poland and the Baltic Provinces. He calls it to the attention of orthopedic surgeons, in order that they may have the opportunity of recognizing the condition in its incipency. Charcot first described this condition in 1858. The condition is characterized by a striking symptom complex. There is pain and cramp in the calf of the leg in walking. There is obstruction to the arterial circulation, shown by pallor and coldness of the foot. There is absence of pulse in the dorsalis pedis and posterior tibial arteries; pain on letting the foot hang down, when the blood enters the arteries; a feeling of coldness of the foot during the night; severe spontaneous pain during the night; a tender induration in the calf of the leg, and the existence of static trouble in the foot. The pathology of this affection is in most cases an obliterating arteritis. Jews are susceptible more than any other race to this affection. Of 65 cases reported, 62 occurred in Jews. In one of Lovett's cases, gangrene resulted demanding an amputation at the lower third of the thigh. The pathologist's report was that there was a diffuse, obliterating endarteritis. His second case was put to bed and kept exceedingly quiet, with the foot elevated, for three weeks. This was followed by the use of crutches and gentle massage, and resulted in the disappearance of active symptoms. The third case has improved after long rest, but the circulation has never quite returned to the normal. Irish⁸ has also reported a case of intermittent claudication, and has given a review of the literature on the subject. His case he states was due to angio-sclerosis of the extremities, which only improved slightly after a long period of rest and treatment.

Congenital Dislocation of the Hip.—Bradford⁹ states that at the present stage of development of the treatment of this deformity, there can be no question that the operation of choice is that of reduction by operative manipulation. It is not only the simplest and safest method, but in a considerable number of cases is the most satisfactory, in that results can be obtained without the employment of any other means. In a considerable percentage of cases, however, complete ultimate success is not obtained by manipulation. Either the anatomical conditions are inadequate to retention of the head in the acetabulum, after manipulation, or the infolded capsule prevents such retention. Permanent reduction of congenital hip dislocation consists not only in placing the head of the femur well within the acetabulum, but in putting the head of the femur in such a relation to the cartilaginous and ligamentous lips of the acetabulum, that the femoral head will re-

main in place. For this class of cases, i. e., those that do not stay reduced after several attempts at manipulative replacement, Bradford recommends an operation for reduction by incision. The older method of gouging or curetting the acetabulum to make it deep enough to retain the reduced head, he does not deem advisable, but suggests in its stead the utilization of the capsular folds for such retention. The operation described by him has been performed on 16 cases, 13 single operations and three double operations, making 19 operations in all. Of these, 14 were successful, four relapsed, and one resulted in death. The steps of the operation are as follows: The patient is placed on the side, and incision is made, passing from the anterior superior spine obliquely backwards and downwards. By blunt dissection, the femoral head is cleared. It is then brought as far forward as possible, and a cross incision is made in the capsule where it is jointed to the head. The attachment of the capsule to the lesser trochanter and to the femoral neck is also severed. The capsular lumen is then inspected and explored with the finger, to determine whether it is sufficiently large to allow the passage of the head. If it is found constricted, it should be dilated by incision. The capsule should then be well retracted, and the head passed to the bottom of the acetabulum. The capsule should then be stitched about the head with silk or some slowly absorbable suture material, in such a way that it will develop a retaining ring around the neck of the femur. The wound should then be closed, and the limb placed in a fixation bandage, in abduction of about 45 degrees. Kirrison³⁰ has made a complete review of the literature of the last five years on congenital dislocation of the hip. He concludes that the bloodless reduction of these luxations under an anesthetic very rarely furnishes perfect results, anatomically speaking, but from the point of view of function, the results obtained are excellent. He states that the most favorable age to accomplish reduction is between the age of three and five years, and that where the individual is of such an age as to render radical cure impossible, subtrochanteric osteotomy affords a result which very often alleviates the severe limping.

Nove-Josserand and Petitjean³¹ state that a consideration of the statistics has convinced them that the most advantageous time for manipulative reduction is before the fifth year, and that the most favorable prognosis can be given when the case is between the second and third year. After the seventh year, the treatment may be successful, but after the tenth or eleventh year, a relapse is probable. They also conclude that there is no advantage in lessening the time of immobilization in the plaster-cast, but hold, on the contrary, that a shortening of this period would favor a relapse. Authorities throughout the world have come to the common conclusion that the manip-

ulative reduction method, advocated by Lorenz, is in the majority of cases, sufficient to accomplish a cure of this deformity.

Coxa Vara and Fractures of the Femoral Neck.—Coxa vara, or the deformity of the upper end of the femur, in which the normal angle formed by the neck and the shaft of the bone is lessened, has been thoroughly considered during the past year by several observers. Helbing¹² has divided it into two main classes; first, where it is congenital, and second, where it is the result of disease or injury following birth. Where the condition is congenital, he states that it may exist as a deformity due to unknown origin, or due to a defect in foetal development associated with other deformities of this nature. Coxa vara that appears after birth may be due to rickets, osteomalacia, ostitis fibrosa, osteomyelitis, tuberculosis, cyst formation in the bone, arthritis deformans or traumatism. Of 10,000 cases that appeared at the Berlin University Clinic, with orthopedic conditions, 77 presented coxa vara. Of these, 20 were of congenital origin, 9 single, 8 double, and 3 in cases of congenital dislocation of the hip. Thirteen were in girls and 7 were in boys. Of the cases not of congenital origin, 24 presented rhachitic deformities, 6 were cases of coxa vara adolescentium, 2 were cases where cyst formation had taken place in the upper end of the femur, 4 were due to tuberculosis of the bone, and 20 were due to traumatism. His article contains a complete bibliography of the literature, and thoroughly considers the various methods of treatment. Schwartz and Siegel,¹³ in a contribution to the study of traumatic coxa vara, divide the cases into two principal categories, the first where there is separation of the epiphysis of the head, or fracture of recent date, and the second where the traumatism is old and the coxa vara is established. For the first class, they recommend the immediate placing of the limb in abduction, after the manner of Hennequin, until union has taken place. For the second class, they recommend one of the various forms of osteotomy, at or near the trochanter major, with correction of the angle to the normal. They insist upon the value of frequent radiographs as a check on the treatment. Feiss¹⁴ has reported a case of congenital coxa vara, which was noticed at the time of birth, the physician observing that the limbs were in a peculiar position, the right one flexed with the knee pointing outward in the normal way, but the left with thigh adducted and presenting extreme flexibility at the hip-joint, suggesting congenital dislocation. There is little doubt that this case was of intra-uterine origin. The author concludes that congenital coxa vara is usually associated with defects or deformities of other parts, and that the cases are often associated with an adducted position of the thigh in utero.

Fracture of the Femoral Neck.—Closely associated with the treat-

ment of coxa vara, the treatment of recent fracture of the femoral neck has been carefully developed by Whitman¹⁵. The well-established belief that this particular fracture differs from all others in that the quality of the patient, or the character of the injury, renders treatment of little avail, he severely criticises, stating that the teaching which has been long in vogue is responsible for the present neglect of this most important and most disabling of all fractures. The condition is not an attribute of old age, as it has been frequently observed in adolescence, and is responsible for a large proportion of the cases of unilateral coxa vara. It is a well recognized fact that the older methods of treatment, i. e., extension by weight and pulley, and fixation by the long splints, have been uniformly unsuccessful. After carefully considering the mechanics of this fracture, the author concludes that there are particular advantages in the following conditions: Complete abduction of the extended limb firmly opposes the trochanter to the side of the pelvis, so that upward displacement of the femur is impossible. This attitude brings the capsule tense and serves to direct the fragments towards one another. It removes the influence of muscular contraction, which tends toward deformity, in that the abductor group is relaxed, while the contraction of the iliopsoas muscle tends to draw the fragments towards one another. He advises, therefore, that the limb be abducted and placed in a plaster of paris dressing, in this position, for all fractures at or about the femoral neck, and that the patient be confined for a sufficient period to assure union. Allis¹⁶ states that theoretically the position recommended by Lorenz in the treatment of congenital dislocation of the hip would give the best results in fracture of the femoral neck. This, however, he believes would be intolerable in practice. It indicates, nevertheless, that abduction of the thigh will give better results than the extension generally practiced by means of adhesive plaster, pulley and weights. Taylor¹⁷ states that immobilization of the joint should be kept up for at least eight weeks, and that no weight should be permitted upon the limb under twelve weeks. He states that the results following treatment by operation are very encouraging, and that operative treatment should always be undertaken in badly neglected cases. Soutter¹⁸ has pointed out the advantages gained by subtrochanteric osteotomy and abduction of the limbs, for the class of cases that presents adduction deformity and shortening after hip-disease, a condition of practical significance in the consideration of coxa vara. He reports 25 cases, on which this operation produced brilliant results. The cases averaged fourteen years of disability. They were inactive and unable to walk or stand, and were changed into individuals able to be aggressively active and self-supporting. Not only was the local condition bettered, but the general health was

greatly improved. Walking became possible in from five weeks to ten months, and became easy at nine, eleven, fifteen and eighteen months, an average of ten months after operation. Standing became easy in from three to nine months after operation. Two of these cases had a few degrees of motion, the others no motion whatever. Shortening in all but two cases was noticed from the time of the disease, and varied from two and three-quarters to seven and three-quarters inches, an average of four inches. The operations were performed from ten to thirty-five years after the original trouble began, and consisted of linear osteotomy just below the trochanter major, thorough stretching of the short muscles, and abduction to nearly 45 degrees, without flexion or outward rotation, and the application of a plaster of paris spica bandage. The recumbent position was maintained for six weeks; apparatus was worn for six months after operation. This resulted in no relative shortening in 23 cases; in 2 cases, one of which before operation presented 6 inches shortening, and the other $7\frac{3}{4}$ inches, of a reduction to $1\frac{1}{2}$ inches shortening. A position of 20 to 25 degrees of abduction was maintained. All legs increased in size after operation, especially the calf.

Bradford,¹⁹ in an article on the use of traction in hip disease, has presented the following argument in its favor: The use of a force that will counteract muscular spasm, and draw the head of the femur away from the acetabulum, favors correction, prevents deformity, and aids healing of the diseased bone tissue. Experiments and skiagraphic evidence show that a traction force can be applied, which will not only entirely overcome the spasm of the muscles about the hip, but which will also, unless ankylosis has been established, draw the head of the femur away from the acetabulum. Clinical experience has shown the advantage of a traction force in the treatment of hip-disease, which is needed only during the stage of active muscular spasm. Traction joined with fixation is needed in the ulcerative stage of the disease. These conclusions are based on the observation of 3,400 cases of hip-disease treated during the last thirty years at the Boston Children's Hospital.

Lateral Curvature of the Spine.—Lovett,²⁰ whose observations on this subject are in all probability the most accurate and conclusive yet made, has written a paper on the treatment of the condition, in which he emphasizes the prevalence of lateral curvature, stating that it occurs in at least 25 per cent of all children, making a problem worthy of serious consideration. He divides the cases into two dis-ince types: (1) The *postural or functional*, and, (2) the *structural or organic*. Postural scoliosis may be described as "faulty attitude," and may persist unchanged as a total scoliosis, with its convexity to the left, with an elevation of the left shoulder, and a depression of the

right; a twisting of the shoulder-girdle, the right side being carried back, and the left projected forward. This condition is within the physiological limit of normal spinal movement, and can be produced in a normal subject by raising the foot with a book. The structural or organic type shows definite organic change in the vertebral column and its attached structures. Three forms are met with: Single and total; compound, consisting of two approximately equal opposite curves; and compound, showing three curves, one large and central, and two smaller. Postural scoliosis is treated by supplying a correct for a faulty attitude. Gymnastics and general hygiene should be instituted. Visual defects, inequalities in the length of limb, and other irregularities should be corrected. Structural scoliosis is treated by means directed towards loosening the stiffened parts of the spine so as to render an improved position possible. This is done by gymnastics, passive stretching, and stretching by forcible correction in plaster jacket. This should be accompanied by treatment designed to retain the improved position, such as a self-correction, gymnastics, symmetrical heavy gymnastics, and retention by apparatus. Wilson²¹ has called attention to certain forms of spinal distortion depending on postures of the head, citing several cases seen with Gould, which presented ocular defects resulting in head-tilting and consequent postural scoliosis. Böhm,²² in an excellent paper, has pointed out the important part played by the peculiar developmental error which leads to numerical variation of the spine in the causation of habitual lateral curvature. He presents 20 cases of lateral curvature, in which definite numerical variation in the number of vertebrae was made out at the primary seat of deformity by skiagrams. He concludes that the developmental error of the human body occurring in embryonic life, which has its morphological expression in so-called numerical variation of the spine, causes in certain instances lateral deformities of the spine, which manifest themselves in the first half of the second decade of life, and which hitherto have been considered as affections acquired in post-natal life, owing to purely functional conditions.

Hallux Valgus.—Wilson²³ has made an analysis of 152 cases of hallux valgus in 77 patients, and has reported upon an operation for its relief. As etiological factors in this condition, he states that any long continued maintenance of position of the big toe, that prevents normal function and posture, will produce hallux valgus. Consequently this condition prevails among shoe-wearers, especially those who wear shoes that are too short and those having high heels or pointed toes, but the greatest factor of all in its causation is the everted and pronated position of the foot in standing and walking. Of the 152 feet examined, 14 were in patients between 20 and 30 years of age; 23 between 30 and 40; 24 between 40 and 50, and 8 be-

tween 50 and 56 years. Exostoses were found in 141 of the cases. Pronation existed in 121 of the feet; 132 feet were markedly everted while walking. In 16 cases there was overlapping by the big toe, and in 124 there was overlapping by the smaller toes. The operation recommended by Wilson, in certain suitable case, i. e., those where there is either real or apparent exostosis formation, associated with more or less extensive dislocation of the phalanx, and the presence of an inflamed bursa, consists in cutting off the inner aspect of the metatarsal bone, with a pair of bone-pliers, and smoothing the edges with a chisel. In three weeks patients operated upon in this way walked with normal function, freedom from pain, and with the big toe in a position closely approaching the normal standard. He states that the inclination on the part of the patient to object to a proper straight position of the great toe, because of the difficulty of wearing what he or she considers "shapely" or "stylish" shoes, is a tendency toward the return of hallux valgus.

The Plaster of Paris Bandage.—Meisenbach²⁴ has made a valuable contribution, the object of which is to give the results of practical experiments made with the plaster of paris bandage, to determine the influence exerted by substances which shorten or lengthen its setting time, and which weaken or strengthen the contexture of the resulting dressing, his object being to determine the question, whether we can modify the plaster of paris dressing, so that it will be stronger, lighter and at the time set quickly. A series of experiments were carried out to determine the time of set, the crushing force, the tensile strength and the porosity of the various combinations of gauze and plaster of paris used to make the ordinary plaster of paris bandage. He concludes that the essential things of value for a good plaster dressing are strength, light weight, quick set and ventilation. The addition of chloride of sodium in small amounts to the water used to soak the bandage, hastens the set but weakens the dressing in crushing force and tensile strength. Dextrine in small amounts strengthens the dressing, but it lengthens the time of set. Starch in small amounts adds to the strength by increasing the tensile strength. Portland cement, added in the proportion of one to nineteen to the plaster of paris when the bandage is rolled, materially strengthens it in all its essentials, and at the same time reduces the time of set and the density. The best material for the plaster bandage is the starch-sized crinoline.

The Surgery of the Paralyzes.—Townsend²⁵ has made a report on the value of the operative procedure for the relief of disability following poliomyelitis anterior. His report covers the operative work done for the relief of paralytic club-foot at the Hospital for Ruptured and Crippled in New York City. He divides the work into three stages: 1894-1899, arthrodesis; 1899-1901, tendon-transplantation; 1901-1905,

arthrodesis, tendon-transplantation, or the two combined. He states that the best results following arthrodesis have been achieved in children operated upon after the sixth year, and that the later in life the operation is performed, the more likely is the arthrodesis to be firm and lasting. After arthrodesis at the ankle, the limb should be supported for a much longer time than is usually advised, if the best results are to be obtained. The plaster-cast should be kept on at least three months, and should be followed by suitable apparatus. Arthrodesis should be performed in cases where no power exists in the muscles about the joints, or where the power is slight. Many cases that have been subjected to tendon-transplantation would have derived more benefit from an arthrodesis. The operation should not be performed on the very young, for the obvious reason that the growth of bone might be inhibited. For hospital cases, he believes the employment of arthrodesis is followed by the best results. Redard²⁸ states that arthrodesis must be recognized as an operation that provides a most fortunate result where there is loss of power about a joint, or where there is tendency toward a faulty position. Tubby²⁷, in the Hunterian Oration for 1906, states that arthrodesis finds its place in the treatment of infantile paralysis when a joint is hopelessly flail-like. In the foot, stability is the first essential. Arthrodesis is not so suitable for the knee as for the ankle. Where the patient can be kept under constant observation, tendon-transplantation, if there is power, will perhaps result in a more mobile and useful part than can be secured by arthrodesis; but where ideal conditions of observation are not possible, he believes arthrodesis will give the best results. As to the cause of want of success following tendon-transplantation, he cites these factors: Deficiencies in technique, defects in perfect asepsis, cicatrization at the point of the tendon slip, subsequent yielding of the tendon of the paralyzed muscle, and the employment of too much or too little tension on the transplanted tendon. In estimating the success of these operations, it is necessary to consider how far an apparently paralyzed muscle is capable of recovery, if aided by removing the harmful effects of constant stretching, and by reinforcing its tendon. In attacking the paralytic affections, either by tendon-grafting, muscle-transplantation or nerve-anastomosis, we are confronted by a most intricate problem, but the early results, considering the comparative failure of all preceding measures, seem to justify a very careful and well considered trial in suitable cases. Bradford²⁸ says that the collection of statistics as to the value of tendon and muscle-transference is extremely difficult, for the reason that each case is a case of itself, presenting certain difficulties which may not exist in other apparently similar cases. At the Boston Children's Hospital, the operation of tendon-grafting, or muscle-transference, has been performed in upwards of 300 cases in the last twenty years. In 48 cases collected in March, 1906, 33 were found to be much improved by operation, 14 showed no improvement, and had died of an independent condition. There are few procedures in the whole range of surgery which are more satisfactory in their results. The essential consideration is that the surgeon's judgment

should be based on a considerable experience in planning and selecting the procedure suited to each case. Spiller and Frazier²⁹ have reported several successful cases where transplantation of nerves in cases of acute anterior poliomyelitis has resulted so successfully that this procedure may now be regarded as passing beyond the experimental stage. They have devised a method for the treatment of athetosis, consisting of switching off, so to speak, some of the excessive innervation of the flexor group of muscles into the extensors by nerve-transplantation, and thus establishing a more nearly normal relation between certain groups of muscles and their opponents. Butler³⁰ suggests a classification for the cerebral palsies of children. The paucity of pathological information has developed considerable conjecture, and as a result various views have been advanced in the explanation of these paralyses. The author gives the following explanation of the cause of spastic hemiplegia. First, vascular lesions, such as hemorrhage from venous or arterial ruptures, the result of trauma, or occurring spontaneously in intense congestion, as in convulsion, or the paroxysms of whooping-cough. Embolism from cardiac or arterial thrombosis, or endocarditis, may also be a cause. Second, inflammatory changes, such as acute encephalitis and meningo-encephalitis, and third, which is rare, a tumor.

REFERENCES.

1. Brit. Med. Jour., Dec. 8, 1906.
2. Amer. Jour. Med. Sci., Jan.-Apr., 1906.
3. Amer. Jour. Med. Sci., Aug., 1906.
4. Amer. Jour. Med. Sci., Dec., 1906.
5. Amer. Jour. Orth. Surg., Apr., 1906.
6. Nouv. Incong. de la Saltpetriere, Jan. & Feb., 1906.
7. Amer. Jour. Orth. Surg., Oct., 1906.
8. Albany Med Jour., July, 1906.
9. Surg. Gynec. & Obs., July, 1906.
10. Revue d'Orth., May & July, 1906.
11. Revue d'Orth., July, 1906.
12. Zeit. f. Orth. Surg., B. XV, 2 and 4 h.
13. Revue d'Orth., Jan., 1906.
14. Jour. A. M. A., Feb. 24, 1906.
15. Therap. Gaz., May 15, 1906.
16. Therap. Gaz., May 15, 1906.
17. Therap. Gaz., May 15, 1906.
18. Amer. Jour. Orth. Surg., July, 1906.
19. Amer. Jour. Orth. Surg., Jan., 1906.
20. Jour. A. M. A., June 23, 1906.
21. N. Y. Med. Jour., July 28, 1906.
22. Boston Med. & Surg. Jour., Nov. 22, 1906.
23. Amer. Jour. Orth. Surg., Jan., 1906.
24. Amer. Jour. Orth. Surg., July, 1906.
25. Amer. Jour. Orth. Surg., Apr., 1906.
26. Ann Med. & Surg. Inf., Paris, July, 1906.
27. Brit. Med. Jour., March 3, 1906.
28. Cleveland Med. Jour., June, 1906.
29. Amer. Jour. Med. Sci., March, 1906.
30. Jour. A. M. A., Dec. 29, 1906.

INTERSTATE MEDICAL JOURNAL.

VOL. XIV.

FEBRUARY, 1907.

No. 2

ANNUAL MEDICAL PROGRESS NUMBER.

PART II.

A REVIEW OF THE MEDICAL LITERATURE OF 1906.

EDITORIAL.

A NEW 'PENOLOGY.

Our present penology, as evidenced by a superficial glance at the headlines of any issue of our daily press, would not seem to the casual observer to be an efficacious system for the prevention and punishment of crime. Fairly reeking with stories of hold-ups, porch-climbing, pocket-picking, safe blowing and social-highwaymanry, convincingly illustrated with photographs and pen-sketches, the picturesque and suggestive side of crime is daily brought home to all of us. The public mind teems with the appreciation of criminal exploits. Good or bad as this publicity may be,—doubtless in certain methods of high finance it has been for the good—a serious consideration of crime, the criminal and his punishment, brings us face to face with the glaring faults in our present penology.

Sir James Stephen says that in early times the fear of private vengeance was the only check upon crime. We know that among the English, justice originally sprung from each man's personal action. Every freeman was his own avenger. This system of private punishment degenerated into blood feuds and anarchy, and it became necessary for the state to assume the office of inflicting punishment on wrongdoers. As pointed out by Eugene Smith, in a recent article in the *North American Review*, the state became, through its criminal laws, the avenger of all crime, based upon the theory that punishment for crime should be retributive. Punishments came into use, which were characterized by the cruelest tortures that malignity could devise. The softening influence of Christianity and advancing civilization put an end to physical torture, and imprisonment for all felonies except capital ones was generally adopted as a means of punishment. This is our present penology, the state occupying the position of inflicting a punishment upon the criminal that actually fits his

crime as near as justice, through our criminal laws, is able to accommodate the retributive punishment.

As a result of this system, not less than 10,000 of the most dangerous criminals are released every year from the prisons of the United States, regardless of the fact that the prison authorities may positively know that they will return to a life of crime, and that they will immediately, not only plunder and kill, but as experts lead and train the entire criminal class. Mr. Smith, in commenting upon this appalling situation, says that in his opinion future generations will inquire with wonder for an explanation of our amazing folly. When we had these dangerous criminals in secure confinement, why did we open to them the prison gates, knowing full well that the lives and welfare of the entire community were thereby endangered?

A new penology seems, therefore, to be a thing most earnestly to be desired. It should be based upon the *indeterminate sentence*, and should offer to the wrong-doer the advantages that have already been proven to exist in a thorough reformatory system in prisons. The criminal should be treated as one temporarily estranged from normal mentality, in fact, as one sick in mind. The idea of retributive action on the part of the state should be abandoned. We feel that to secure this end, boards should be established to pass upon the mental status of each criminal before he is released, that prison authorities should better understand the psychology of crime, and that no criminal should be regarded as having made compensation for his evil deed until he can satisfactorily pass muster before those skilled in the observation of criminals, and be set at liberty only when he is fitted for normal citizenship.

The demand for a new penology is imperative, and the realization of the demand depends upon public education to a point where these things are seen clearly. It should be a duty of the medical man to understand these questions and do his part in this most serious step toward the advancement of our civilization.

THE SURGEON'S POWER OF LIFE AND DEATH.

A subject fraught with interest to American surgeons is Dr. J. A. Rigby's article on The Surgeon's Power of Life and Death in the *Independent Review* (London) for December. Were the article published in a medical journal, mild if any excitement would attend, but its appearance in a literary journal whose circulation may be large, but whose readers are undoubtedly composed of all strata of society, must perforce give us pause, so that a protest may be lodged against a writer whose written thought indicates a narrowness of horizon and a multitude of prejudices, surprisingly out of keeping with medical progress.

Dr. Rigby is another illustration of that large class of modern physicians who use the lay press to tell the public the mistakes of others and the infallibility of themselves. He asserts among other things that "gradually, progressively, almost imperceptibly, there has of recent years arisen in our midst a new tribunal—endowed with the power of deciding questions of life and death and there is no appeal whatever from its decisions, which are practically immutable and irresistible." Just why this is called a new tribunal is not evident, for he who reads the history of medicine and surgery intelligently, cannot fail to recognize that from time immemorial the doctor or surgeon in charge of a case was the power supreme to decide whether or not a certain course of treatment was necessary, or an operation imperative. We have never heard that the lowest or highest court in a country ever interfered, or that an appeal to a king, prime minister or president, was necessary before an operation could be undertaken.

To controvert Dr. Rigby's contention "that the terrible power of life and death was placed in the hands of an inexperienced youth, practically without any safeguard," we would suggest that the inexperience of the modern surgeon is as nothing compared with the inexperience of the surgeon of quite recent date, say fifty years ago, when, according to our interpretation of the courageous words of Dr. Rigby, the tribunal was unrelated to its modern offspring. Life, today, before that awful tribunal which seems to loom large in Dr. J. A. Rigby's provincial brain is no less safeguarded than in the good old days when a surgeon, during an operation, held a knife or two in his mouth, provided it was large enough, and thought water in its pristine state good enough and Listerism a farce.

The cold water cure of Vincenz Priessnitz was devised for certain ailments but we doubt, with considerable forbearance and graciousness, whether an ovarian tumor could be cured even by its daily application. Goose grease has many virtues, but though constantly and assiduously applied in a case of appendicitis, failure undoubtedly would result. And there are many other remedies that have been lauded to supplant operations, not to mention the unique one of the immortal Sairy Gamp, who drank the whiskey herself instead of administering it to her patient, thus illustrating by irradiation (her laden breath was supposed to strengthen the patient, indirectly) the first principles of "Science and Health."

To return to the "tribunal," which word seems to be an irritant to the doctor's composure, the only tribunal, when a conscientious surgeon is brought face to face with the problem whether or not to operate, is that which is evolved from his inner consciousness, strengthened as it should be by knowledge, judgment and mental equilibrium. If, in his opinion, an operation is necessary, he is doing what is right and proper in declaring it to his patient, for the statement is not the idle thought of an idle moment, but the quintessence of many thoughts which his read-

ings and observations in many fields have innured him to. Tribunals such as Dr. Rigby would have us venerate are about as awe-inspiring and formidable as Tennyson's "World's Great Altar Stairs" and would cause so much vacillation on the part of the surgeon that timidity instead of judgement-plus-tempered-audacity would result. And vacillation is not to be thought of in connection with the Surgeon's Power of Life and Death, for if once it usurps the decisive, clean-cut attitude of the forceful surgeon, it shakes the confidence of the patient and destroys the sureness, the coolness, the equilibrium of the operator.

LITERARY NOTES.

A book whose appearance is most opportune at a time when the founder of Christian Science is being exploited in our weeklies and monthlies is Mark Twain's work on Christian Science, which the Harpers promise to have ready for publication February 7th. The author, though famous as a humorist, can be serious when he wants to; and of all the subjects which have engrossed him during the past decade none has moved him to more serious thought and reflection than Christian Science. The advance sheets show that his pen has lost none of its cunning. To prove this we cite the following:

"It was night by this time, and she could not conveniently come, but sent word that it was no matter, there was no hurry; she would give me 'absent treatment' now, and come in the morning; meantime she begged me to make myself tranquil and comfortable and remember that there was nothing the matter with me. I thought there must be some mistake.

"Did you tell her I walked off a cliff seventy-five feet high?"

"Yes."

"And struck a boulder at the bottom and bounced?"

"Yes."

"And struck another one and bounced again?"

"Yes."

"And struck another one and bounced yet again?"

"Yes."

"And broke the boulders?"

"Yes."

"That accounts for it; she is thinking of the boulders. Why didn't you tell her I got hurt, too?"

"I did. I told her what you told me to tell her: that you were now but an incoherent series of compound fractures extending from your scalp-lock to your heels, and that the comminuted projections caused you to look like a hat-rack."

"And it was after this that she wished me to remember that there was nothing the matter with me?"

"Those were her words."

No wonder Mark Twain exclaims that he sometimes thinks it "a pity that Noah did not miss the boat."

ORIGINAL ARTICLES.

THERAPEUTICS.

IN CHARGE OF

WM. ENGELBACH, M. D.

SERUM AND VACCINE THERAPY.—The advancement of this branch of therapy during the last year has equalled, if not surpassed, that of any division of scientific medicine. Based upon the absolute results of the establishment of new means of therapy, a review of the work done along this line is not conclusive. The relative value of the immense amount of investigation for the production of immunity and the development of specific treatment of disease, has done much, however, towards establishing a scientific basis for this form of therapy. The lack of physiologico-chemical knowledge, and the limited amount of time and observation to which this method of therapy has been subjected makes it to a great extent experimental. Yet the progress made in the course of the investigation and application of this means of therapy concerning the pathogenesis, the primary cause and effect, and the reaction of the cellular elements of organisms to disease, has led to the prediction that the future will develop by this means a rational therapy which will accomplish more than any treatment we have hitherto thought possible.

The advancement made in new serum therapy of any positive value then has not been great. The application of this method of treatment has been greatly extended into the other great classes of diseases now known as noninfectious and many changes have taken place in the preparation, indications, use and administration of the established and nonaccepted serums. Among the greatest achievements conferred by this research is the establishment of some of the causes for the non-effectual results of this means of treatment of certain diseases. Perhaps the most marked impression that this year has made upon medical progress is the notable development of vaccine treatment. These investigations pertaining to this means of producing active immunization have more or less perfected a method of determining and controlling this immunity by means of the opsonins and the hemolysis of the blood. The application of these control tests has provided a scientific basis for the administration of all these products, serum, vaccine, and organ extracts. Although vaccination has not been used extensively during the past, the present trend of investigation seems to warrant its extensive application in those diseases in which a specific organism has been isolated, and to indicate that it is destined to become one of the leading therapeutic measures of the future.

GENERAL CONSIDERATION.—From the present conception of this subject, serum therapy means the administration of serum which has either antitoxic or antibacterial properties for prophylactic or curative purposes. These serums are prepared by inoculations of animals with specific substances for which an antiserum is desired. The specific substances are: (1) bacterial, as diphtheria, tetanus, etc.; (2) animal, from snakes, toads, scorpion, etc.; (3) plant, as mushroom, and (4) tissues, as exophthalmic thyroid gland, etc. The substances may then be: (1) The exciting cause of the disease; (2) products or derivatives of the exciting cause of the specific disease; (3) products from animal and vegetable tissue, in case the specific cause is unknown. These substances when inoculated in small and increasing doses into susceptible animals create in the blood serum of those animals anti-bodies which produce a tolerance in those animals for more than a toxic dose of that specific substance. The production of these anti-bodies by means of the organism itself, as an effect of inoculation, is termed "Active Immunization," and this method of inducing increased resistance against a specific substance is known as "Indirect Serum Therapy." When these anti-bodies produced in one organism are used to protect another organism against these specific substances, the method is that of "Direct Serum Therapy" and the protection conferred is "Passive Immunity."

Vaccination, used in the sense meant by Jenner and Pasteur, refers to the inoculating into man of living bacteria of attenuated virulency. But as regarded to-day the definition of this term must be extended to the inoculation of attenuated or killed micro-organisms, or even more liberal, to the production of active immunity by the inoculation of some specific product. Wright limits the use of this term to "the inoculation of a standardized sterile suspension of micro-organisms." The increase of resistance produced in man by this method is therefore "Active Immunity," and this indirect means of producing immune serum in man is termed "Indirect Serum Therapy." Active immunization forms its specific anti-bodies over long periods of time causing a more protracted protection than that of passive immunity. It has been proven experimentally that this resistance persists after anti-bodies cease to form. This is explained upon the assumption that the cells of the body have been trained to produce corresponding receptors and if subsequently the same bacteria gained entrance into the body, new anti-bodies are formed so fast that the incipient infection is overcome. It is not absolutely necessary, if a broad meaning of this term is allowed, for the cause or organism of disease to be known. In smallpox and hydrophobia, for instance, this method of treatment has been accepted and yet the virus is unknown. It is especially applicable, however, to those diseases caused by bacteria which secrete no soluble toxins, but contain in their protoplasm certain endo-toxin. These diseases cause an immunity of considerable duration, and the serum

agglutinate the corresponding organism. The serum has, however, little or no curative value and the production of antitoxin is questionable. The successful treatment of these diseases, such as typhoid, dysentery, cholera and plague, by the means of vaccination is one of the expected developments of the near future. The wide applications of this method is illustrated by the work of Turton and Parkin who accepted this general plan for the treatment of diseases. They ascertained the exact causal germ and estimated the opsonic index of the patient for that particular bacteria. The general plan was to create, by means of vaccination of the causal germ, anti-bodies in the serum indicated by the behavior of the opsonic index. Among the conditions treated were bacillus coli infections, bones, intestines, and lymph-glands, meningitis, hip and spinal diseases. The amount of the benefit derived was varied. The acute cases were the most difficult on account of the limited time in which to raise the opsonic power to such a degree as to influence the cause. Weinstein used this method, according to Wright's principles, in the treatment of surgical infections, for example, chronic fistula, which were difficult to heal by other means. He reported favorably upon this method and confirmed the findings of Wright in every particular.

One of the difficulties of this method is the danger that the inoculated virus is sufficiently attenuated or sterile to prevent causing fatal disease in man. The difficulty of the attenuation or sterilization of certain virus is exceedingly great, for instance, the process may take years as in plague. Otto, Kolle and Strong, succeeded in performing the sterilization and vaccination of plague virus successfully on humans. After carefully testing cultures of plague on animals, they made a series of inoculations into prisoners sentenced to death, with no deleterious results. The study of the agglutination and the inoculation of the serum from the prisoners gave abundant evidence that the vaccinations were effective. The warning, however, must be duly sounded that unless utmost care is taken, untoward results will surely follow the inoculation into humans of substances of unknown virulence.

CLASSIFICATION.—From the above general discussion the intimate relationship existing between these two forms, of serum or indirect, vaccine or direct, serum therapy is demonstrated. One is merely the complement of the other, and it is this fact which makes them difficult of discussion singly. For this reason they are considered more or less together in the report of the specific application to the diseases in which they have been especially applied. The following outline classification has been given:—

I. PROPHYLACTIC INJECTION.—(a) Active immunization; 1 inoculation of virulent organism in experimental work; 2 injection of attenuated virus or toxins; rabies, diphtheria, and tetanus; 3 injection of killed organisms; anthrax, swine plague, cholera, typhoid and plague; 4 injection of bacterial constituents; Koch's Tuberculum T. R. (b) Passive im-

munization; injection of antibacterial and antitoxic serums. (c) Mixed active and passive immunization; 1 simultaneous injection of an immune serum with the corresponding micro-organism killed or living: swine plague, erysipelas, rinderpest, experiment in typhoid, cholera and plague.

II—CURATIVE INJECTIONS.—(a) Active immunization: 1 injection of killed micro-organisms in small doses suggested by Fraenkel in the treatment of typhoid. (b) Passive immunization; 1 with antitoxic serums, diphtheria, tetanus snake bite, plague, tuberculosis, typhoid, streptococcus, etc.; 2 with antibacterial serums, typhoid, cholera, plague, dysentery, streptococcus, staphylococcus and pneumonia.

GENERAL APPLICATION.—The general principles concerned in this treatment then are: (1) Antitoxins; (2) bactericidal or antibactericidal serums; (3) vaccinations. The first two belong to the realm of direct serumtherapy, the third, to the indirect serum therapy. With infections there are two combinations possible, (1) an affinity of the toxin with the antitoxin; (2) an affinity of the toxin with the tissue cells. Work by Donits showed the rapidity of the union of the toxins with the cells. For instance if tetanus toxin was introduced first and four minutes later antitoxin injected, an excess of the antitoxin over the toxin was necessary to prevent the development of tetanus symptoms. Eight minutes after, six times the neutralizing dose; sixteen minutes after, twelve times, and one hour after, twenty-four times the neutralizing dose was required. A few hours later not enough antitoxin could be introduced to save the animal. Practical experience with diphtheria shows that the longer the disease lasts the larger the dose of antitoxin that is required for a cure. On the contrary only a neutralizing dose is necessary as a prophylactic measure. Two important principles have been involved in antitoxin therapy: (1) That of early administration; (2) sufficiency of the size of the doses. General factors for the success of serum therapy are the following: (1) Its concentration; (2) the freedom from contamination; (3) the time of administration; (4) the quantity injected; (5) the degree of affinity of the toxin for the antitoxin; (6) the degree of the affinity of the toxin to certain tissue cells; (7) the organ concerned in their recuperative power; (8) the excessive affinity of the toxin for the antitoxin, bacterial and antibacterial serum. The following factors are given for the low curative value of certain serums: (1) They are not antitoxic. (2) They cause the liberation of excessive endotoxins. (3) They are liable to produce exogenous complements. (4) The power of the tissues is not able to absorb complements of foreign serum. (5) The lack of suitable amount of complement in the human body. (6) The difficulty of obtaining suitable combining bodies for human complements. (7) The excess of the latter diverting the complement. (8) The inaccessibility of the micro-organisms in, e. g., typhoid, cholera.

TUBERCULOSIS.—This disease, as is its due, has received more consideration than any other disease along this line of the production of immunity and specific treatment. Koch in his original announcement regarding tuberculin in 1890, claimed the following properties for it: (1) Its power to produce a specific reaction in persons having tubercular lesions; (2) its curative value if administered over a certain period in suitable cases; (3) he limited its therapeutic value to incipient or afebrile cases. Francine,¹ maintained, that notwithstanding the storm of reaction following this assertion, Koch's tuberculin has come to be recognized as a remedy of great possible value, but even yet it should hardly be placed beyond the experimental stage. Osler, speaking before the British Congress on Tuberculosis in 1906 said: "In the wards of Johns Hopkins Hospital I have used tuberculin, very much as Prof. Koch advised. I can give willing testimony as to its commendable value in certain cases, particularly in obscure abdominal conditions, doubtful apex lesions, and in pleurisy. An important point is its harmlessness. I remember no case in which injurious results have followed the injection." Trudeau² from an extensive use of tuberculin recommends especially its administration in extremely small doses (1-10,000 to 1-20,000 mg.) at the beginning. He prefers the solid substance of bacillus emulsion (5 Mg.), or old tuberculin (1 cc.). He said that he was convinced that any danger lies principally if not wholly in a faulty and reckless administration of tuberculin. Farther than that he has formed the impression that tuberculin brings about somewhat better results than can be obtained by sanatorium methods alone. Ravenel tersely gives the great difficulty in the way of producing an anti-tuberculin serum, as that of the impossibility of obtaining the sum total of the toxines formed by the tubercle bacillus. In general all efforts have been directed towards the production of immunity after the methods of Pasteur—by attenuated culture; or by the use of toxins and products of the tubercle bacilli, or combinations of the two. The object is to bring about a true vaccination against the disease in some of the lower animals with a formation of anti-bodies in the blood. These anti-bodies then to be used by the injection into man to produce passive immunization or as a specific treatment for man.

The number of tuberculins has not been materially increased during the last year. Koch's old and new tuberculin and modifications of the same have been reported with varying degrees of success and failure. Beraneck³ made known a new tuberculin which differs from Koch's in several respects. This serum contains (1) extra cellular toxins T. B. (toxine bouillons); (2) intercellular toxines A. T. (acido-toxins). A combination of these two elements produces a product which is only slightly toxic but markedly bactericidal. Phillips, of Edinburgh, adds his confirmation to that of Beraneck, as to the value of this agent in the treatment and diagnosis of all forms of tuberculosis. Von Behring believes he has discovered what will prove to be a curative principle in the

treatment of tuberculosis. This specific has not yet been made public on account of his desire for fuller investigation of testing out experimentally, both pathologically and clinically, its value. He announced its name as that of "Toulase" at the International Congress of Tuberculosis at The Hague in August. He will not give his remedy to the profession until the fall of this year (1907). Marmorek's serum has been widely tested abroad and opinions are quite different as to its efficacy. The reports of Dieulafoy, Halloteau, and Lucas-Shampouniere in France are unfavorable to it, while other investigators, among whom may be mentioned Latham in England, Frey in Germany, Richer in Canada, reported favorably of it. Maraglino⁴ reported remarkable results in the use of his serum administered in various ways, directly into the foci of infection, also per mouth and rectum. The use of this method by Walsh, Stanton and Landis⁵ at Phipps Institute was not encouraging. They admit, however, that their trial of this serum was not confined to incipient cases without secondary infection. Ravenel said regarding this serum that Maraglino had undoubtedly proved his claim in regard to procuring a serum which protects experimental animals against the poisons of tubercle bacilli, so far as we have been able to obtain them, and also against the tubercle bacillus itself in pure culture when given in doses which do not overwhelm animals, but which have been shown to be fatal. Maraglino immunization against animals proves that they present special defensive material in their blood which can be transferred either to animal or man, causing passive immunization. These defensive powers consist of (1) anti-toxin, (2) agglutinins, and (3) bacteriolisms. They are obtained from the serum of the blood, and the extract of leucocytes of the immunized animal. He also claimed that the milk, meat and eggs of the immunized animals contain anti-bacillary properties and are indicated in the treatment of tuberculosis. He reports success in the treatment of processes of closed tuberculosis. In processes of the lungs the conditions are more complex because of the secondary infections, therefore this treatment is only partly specific. In general conditions, as of the pleura and peritoneum, the treatment depended upon the general resistance. The cures have been observed for 12 or 13 years. In many cases the results were remarkable and the treatment has been entirely harmless. His reports cover the statistics of this treatment on 20,000 patients from 1895 to 1905. Patterson⁶ used caseous material in the treatment of tuberculosis. He destroyed the living bacilli by the intermittent application of cold without changing the constituents of the solids. The final product, by special preparation, contained 5 mg. of solid substance to each cc. The injection of this material controlled by the opsonic index caused a rise of the tubercular opsonins without the usual decrease of these opsonins (negative phrase) following. After the administration there was usually a rapid rise of the opsonic index—from .5 to normal within 12 hours in one case.

He found the temperature a convenient guide to the dose. A rise of 1-2 to 1 degree gave the best results and maintained the index within normal limits. If there was no rise of temperature the index might be high and yet little improvement observed.

Hoffa⁷ used Marmorek's serum in the treatment of 40 surgical cases of tuberculosis. He found rectal injection the most convenient form and as effective as the other means of administration. His experience confirmed its harmlessness and its curative influence in this form of tuberculosis. Five to ten cc. were injected into the rectum daily, and the effect was promptly evident. In one case a fistula, which had resisted treatment for two years, closed after the third subcutaneous injection, but opened again after the serum was withdrawn. It was cured completely by fourteen rectal injections. Cheyne, by the use of Wright's methods, controlling the tuberculin injections by the use of opsonic index, reports cases of bone, joint and genitourinary tuberculosis which failed to give the expected satisfactory results. He views the position of tuberculin as a valuable adjunct to the treatment now in vogue, but is not prepared to abandon surgical measures when they are indicated. Brown reported three cases of tuberculosis of the bladder in which Koch's tuberculin tr. was used with success. Low⁸ indicates the use of Koch's new tuberculin in surgical cases when there is no evidence of reinoculation. Pogue,⁹ from the study of 167 cases drew the following conclusions: Tuberculin in small doses (.01 to .05 mg.) seems to have a more curative action than larger doses, without the danger of injurious effect. Through proper administration incipient cases improve rapidly under the use of small doses. Tuberculin should not be given to patients having a fever, in which case it will not benefit the mixed infections. Luedke¹⁰ said that clinical observation has not demonstrated the specific action of tuberculin. It does not cure directly but merely arrests or improves the process. Antituberculin cannot be extensively present when small amounts of tuberculin again induce a reaction after weeks and months of immunity. Rothschild reported 25 cases of tuberculosis treated with intravenous injections of Koch's tuberculin, in all of which the effect was encouraging. Compared with the hypodermic injection it produced a stronger reaction. No unfavorable results occurred. As high as 2 cc. was given at a time and the treatment continued from one to two months. Ganghoefer¹¹ detailed the treatment of 12 tubercular children under permanent treatment of Koch's old tuberculin. His impression was that tuberculin treatment in children bore great merit, and should be given an extensive trial.

Livitare treated animals with an aqueous extract of living tubercle bacilli. Their serum acquired anti-bacillary properties with little anti-toxic power. It agglutinated tubercle bacilli when diluted one to two thousand. In experiments with other animals in which living virulent tubercle bacilli were placed between the loops of the intestine, this serum

displayed marked curative power, preventing the development of experimental tuberculosis. The serum of tubercular patients failed to show any curative action. From Elsaesser's experience with the use of Koch's new tuberculin on 74 cases, he said that it was very efficient if administered during the early stages, while the infection is still purely tubercular. Even if its curative and immunizing action is not accepted it can be administered as a specific remedy against the fever. Krause maintained that, notwithstanding the warning to the contrary, fever is not a contraindication for tuberculin treatment for tuberculosis. Results justified the treatment which he gave patients in whom sanitarium treatment was impossible. He used Koch's bacilli emulsion in 1 per cent dilution in salt solution in doses ranging from .005 to 0.03 mg. Benefit was apparent in every instance. Griffith reported three cases which were unfavorable for tuberculin treatment, yet the treatment was of great value in two, and did no harm in the third. Delacamp, in a review of the present status of the treatment of tuberculosis, concluded that dietetic and hygienic measures stand in the foreground. He says none of the serums yet made have won a place in therapeutics.

The serodiagnosis of tuberculosis is not thoroughly established. Kinghorn and Twitchell, from an investigation of this subject, concluded that serum diagnosis of tuberculosis, especially the early diagnosis, is of no value. Jessen found that, in 86 out of 222 patients who had been living in the mountains, the agglutinating power of the blood serum was increased. Patients treated with tuberculin failed to show increased agglutination.

Wright's claim for the value of the opsonins as a diagnostic means is that a low (below .75) or high (above 1.2) tuberculo-opsonic index indicates either the presence of a tubercular lesion or a marked predisposition for tuberculosis. Ross, after an extended experience with the opsonic index as a means of diagnosing pulmonary tuberculosis said the result is very satisfactory. In differential diagnosis of the chronic form of pulmonary tuberculosis from chronic bronchitis, emphysema, bronchiectasis and malignant disease of the lungs he has used this method with success. He believed that the tuberculo-opsonic index will eventually prove of material assistance in the diagnosis of early tuberculosis. Cheyne from his experience with the opsonic index as a control for treatment of surgical tuberculosis, said that the result depends on the personal equation of the examiner, and that it has not the strict mathematical accuracy that one could desire. Another difficulty is the cumbersomeness of the method which makes it impracticable for the busy physician.

Bandelier's experiments confirm the results of Koch's technic for the use of tuberculin for diagnosis. He affirms that it is only the maximum dose of 10 mg. which gives a reliable reaction. Kemp, Bossi, Meyer and Biernbaum have used the tuberculin test as a diagnostic factor in indefinite

conditions of the female genital system. Lorenz¹² relates his experience with a number of tubercular patients who were given a sham injection of tuberculin. His table shows that in 44 out of the 200 patients given sham injections there was a rise of temperature. He suggests it might be wise to test the influence of suggestion in this way before really injecting tuberculin. A rise of .5° C. can be accepted as a positive reaction to tuberculin if this is computed from the temperature noted due to suggestion. In some of the cases, the patients who had the most pronounced rise of temperature after sham injections failed to show any rise when tuberculin was really injected. Another fact noticed was that the suggestive reaction was more pronounced when the organism was depressed.

Vaccination, as considered in the limited sense, has been attempted in tuberculosis extensively during the past year. It has been the underlying principle of a number of the tuberculins used in the past. This method has received impetus by A. E. Wright's application of the production of opsonins in the blood to control the inoculation and regulate its dose. Wright reports favorably on this method of treatment in a large number of even advanced cases of localized tuberculosis and other infections. Gray has successfully employed the vaccine treatment according to the method advocated by Wright in the treatment of tubercular glands, joint affections, tenosynovitis, psoas abscesses, peritonitis, genito-urinary tuberculosis and tubercular disease of the upper air passages. Presse¹³ reported the findings of the vaccination of calves according to Von Behring's method. Calves which have been vaccinated and then placed in an infected stable failed to contract tuberculosis. The marked contrast between the advanced diffused lesions of the non inoculated and circumscribed relics of the inoculations in the animals inoculated was most striking. Bungern¹⁴ in inoculating monkeys with tuberculosis could observe no difference in the effect of human and bovine bacilli, and the facts of the reaction of the serum corroborated the danger of man to bovine, as well as human tuberculosis. Raw¹⁵ reiterated his previously expressed views that human and bovine tuberculosis are distinct varieties of the same disease and that man is susceptible to both, especially to bovine tuberculosis in the milk-drinking period of life. He collected the blood of animals cured from tuberculosis for the purpose of using the serum after careful preparation, to vaccinate children whose parents died of phthisis, with a view of protecting them from that disease. Along this line Maraglino vaccinated children with ordinary tubercle bacilli, killed before inoculation. This is done in the arm at three points, with the result of the production of small indurated postules, with a slight rise of temperature and a swelling of regional glands, all of which symptoms subsided in two or three days. He said his work in this line has given satisfactory results, the children all presented defensive substances

in the blood, and their general condition remained good as long as observed. He claimed (1) it is possible to produce a specific therapy for tuberculosis; (2) it is possible to immunize animals against tuberculosis, and (3) that there is good reason to hope for an anti-tuberculous vaccination for man.

DIPHTHERIA.—The use of this established serum continues to show its specific prophylactic and curative results. The progress made with it concerns: (1) Its modification—as concentration and elimination of contaminating substance; (2) its administration, intravenously, by mouth and per rectum; (3) its empirical uses for other diseases, as erysipelas, scarlatina and Graves' disease; (4) an important development as to its contra-indications—status lymphaticus.

Gibson working in the health department laboratory of New York City has perfected a method by which the dose has been reduced one-half. This concentration of the serum has proven a benefit, reducing pressure necrosis abscess at the seat of inoculation, and the skin eruption and joint conditions which are supposed to be due to percipitins present in the unrefined serum. The marked prophylactic action of the serum is demonstrated by the arrest of an epidemic of diphtheria in a Norwegian town, reported by Maag.¹⁶ Out of 423 persons immunized, only three developed diphtheria later and this not until 35 to 65 days. In some cases the parents who had not been injected developed diphtheria, while all the children who had been injected, escaped. The immunity conferred lasted about five weeks. Intravenous injections of diphtheria serum have been used extensively by Visson.¹⁷ He gave as high as 110,000 units. Comparing his mortality of the subcutaneous, 13 per cent, and intravenous, 16 per cent, it is noted that the latter is high, but he says this is due to the fact that all severe cases were chosen for this method. Ohlmacher, in writing on status lymphaticus, said that this is probably the cause of death which followed the injection of anti-diphtheria serum in a number of cases. This counter-indication for its administration must always be considered and excluded before the serum is administered. Wilbur¹⁸ reported a peculiar case of rash following antitoxin, accompanied by other alarming symptoms such as oedema of the lips, tongue and eyelids, and marked dyspnea. The pulse became imperceptible, although the apex beat was vigorous. The condition grew gradually worse but eventually subsided under stimulating treatment. Lopez¹⁹ said that early curative doses of this antitoxin administered in scarlatina curtailed suffering and lessened risk to the patients. He also found this serum equally effective in all anginas, tonsillitis and quinsy. He said it neutralized the toxins, reduced the fever and delayed local congestion. He maintained that the extreme large doses of 100,000 units indicated in some cases are without an element of danger. Mastri²⁰ reported three cases of erysipelas which seemed to be cut short, or were favorably influenced, by two injections of this serum. He used 400 units in children and 1,000 in adults.

TETANUS.—Although the prophylactic serum treatment of this disease continues to be more firmly established, little has been done and few favorable reports recorded on the satisfactory active treatments after the symptoms of tetanus were present. Intravenous and subdural administrations have not proven to have great advantage over the subcutaneous method. The application of dried serum locally has been reported with favor. Large and continuous doses given after the development of symptoms of tetanus have saved a few protracted cases.

Wolff and Eisner²¹ have obtained by Burgell's method a tetanus toxin which contained very slight toxicity and was well tolerated by animals. Research resulted in proving that it has no death-dealing properties, while it still retained unimpaired its contracting principle. Animals treated with the toxin afterwards became immunized to a certain extent, although they showed a marked susceptibility to tonic contractions stimulated by certain sounds. They are attempting through these experiments to introduce an improved serum. Scherck's²² widely quoted statistics as to its prophylactic efficiency, bears out the early claims for this serum as a certain preventive measure. He tabulated 291 cases of which 190 were 4th of July injuries of 1906, having prophylactic treatment of antitetanus serum, without a single case of tetanus. Compared with the results of the same injuries of 1903, without the use of the serum given in advance as a prophylactic measure, when 1-3 of the cases succumbed to tetanus, the result is remarkable. Bergola²³ related good results with 30 cases given prophylactic injections, and two cases with developed tetanus. He stated that the action of the serum is especially pronounced in protracted cases. The intracerebral or intravenous method did not appear to have any advantage over the subcutaneous administration. He said that from 1887 to 1902 an average of 750 cases died annually of tetanus in Italy. During the later years, of the 1800 patients he had encountered, the above mentioned had only developed tetanus, and they had developed it before this serum was injected. Kinoium²⁴ reported favorably on the application of tetanus antitoxin as a dressing for wounds with a view of preventing tetanus. They healed more rapidly and with less disturbance than those treated in the ordinary way. Vaccination, furuncle, and a wound of the nose after an operation are cited as instances. He concluded that the results show that dry serum possesses other than its specific antitoxin, and this must be in the nature of the immune bodies. Engelmann reported the recovery of a case after 5 days of symptoms on the use of intraspinal doses of 60 to 80 cc. daily. Cooley²⁵ said he believed the mortality of this disease to be due to the perfunctory treatment on the part of the attending physician. He advised the free use of the serum subcutaneously and intravenously in from 50 to 70 cc. daily.

STREPTOCOCCUS SERUM.—The reports on this serum do not lead to more positive conclusions regarding its value. This group of organisms con-

tains endo-toxins but form neither anti-toxins nor bactericidal serums. Their curative value is very low in experimental work, failing totally if injected a few hours after the injection of the micro-organisms. Clinically they are recognized as failures, but developments of the last year have brought forth a few instances of their use as prophylactic agents. This new application may prove to be of value.

In an anti-streptolytic serum reported upon by Bottenger and Browning²⁶ (from its use in 20 cases) they have an agent which is not antitoxic in its action, but bactericidal for streptococci. Severe reactions followed the use of this serum in subcutaneous injection of 10 to 20 cc. Rectal administration did not produce bad results. They concluded that it produced general improvement in cases of advanced tuberculosis presenting the finding of the mixed infection, in all instances. In the cases where no acute symptoms were present it seemed to exert a favorable influence on the course of the disease sufficiently often to suggest the presence of streptococcus in tuberculous processes even in many cases when there are no signs of mixed infection.

Barney²⁷ reported good results from the use of this serum in tuberculosis complicated by secondary infections. He says the reaction may take place from 12 hours to 6 weeks. He usually gave four or five doses subcutaneously at intervals of 1 to 2 days. He has used the remedy by rectum for 10 or 12 doses before resorting to his hypodermic use. He has seen unquestionably good results attend its use even when streptococci were not found in the sputum. He believes that the clinical evidence affords a basis for its use.

Fromme²⁸ reported good results from the prophylactic injection of 10 cc. of anti-streptococcus three or four hours before undertaking an important abdominal or vaginal operation. He used it with advantage in 21 cases. In several other cases in which he used it as an active therapeutic agent the results were less beneficial. He said that little can be hoped for in pyemia, septicemia and chronic processes; in fact, powerful reaction in these conditions will do more harm than good. Powers²⁹ concluded that the serum has failed to gain a place in surgery. Raw³⁰ has used the serum in more than 200 cases of various kinds of septic infection, including malignant endocarditis. He said that purely streptococcus serum is of great value, especially when administered directly. He used the polyvalent serum as follows: Bowels are freely cleared by aperients, the rectum gently washed out with saline solution, and the following formula injected into the rectum a. m. and p. m., or whenever necessary:

Antistreptococci serum	20.
Normal salts solution 100°F.....	40.

PNEUMONIA.—Neither serum nor vaccination treatment are recognized of value for this disease. MacFayden³¹ succeeded in extracting litheral toxin from the body of virulent pneumococci, and is now carrying on a series of immunizing experiments with a view of procuring an antitoxic serum. Welsch³² concluded that the dynamic effect of pneumonia serum is so slight as to seem of no importance to the toxemia, and the pneumonia sepsis remains apparently unaltered by the use of this serum. Rosenow³³ said that the serum of normal or pneumonic individuals has no bactericidal effect whatever on pneumonia, yet there must be an antitoxin formed, for the healing and crisis of pneumonia do not solely depend on phagocytosis.

SCARLATINA.—Moser's scarlatina serum which was reported upon favorably by results from Eschrich's clinic in Vienna has not had definite confirmation. This serum is prepared by the inoculation into animals of the cultures made from the right auricle of patients who have died from scarlatina. The use of antidiphtheritic serum for scarlatina has been mentioned. In regard to this, Nacrides³⁴ says that antidiphtheritic serum is not indicated and it may do harm as it tends to interfere with the function of the kidneys, thereby increasing the susceptibility to nephritis.

DYSENTERY.—Some very favorable reports have been communicated on the serum treatment of this disease in those cases in which the specific organisms could be absolutely isolated. Balliard and Dopter³⁵ stated that the serum of the horse immunized against the bacillus of dysentery possessed microbial and antitoxic properties which render it useful in therapy. It is entirely harmless for man and has proven almost specific in the treatment of bacillary dysentery. It had no effect upon other varieties of dysentery. The results were practically constant in 96 cases treated. The dose ranged from 20 to 100 cc. repeated once or twice every 24 hours. The Shigi-Krause bacillus was inoculated into horses. The serum derived from these animals proved equally efficient against the Flexner bacillus dysentery.

TYPHOID.—The preparation of an efficient antityphoid serum remains questionable. MacFayden³⁶ gives the results of the immunization of the goat with the cell juices of the bacillus typhosus. Virulent bacilli directly from the peritoneal cavity of the guinea pig were cultivated on nutrient agar. By a detailed process the juices were separated from the cells. The serum was toxic on intravenous injections to goats and rabbits. Large doses were fatal, but small doses gradually increased and duly spaced proved successful in creating a tolerance of the animal to otherwise fatal doses of typhoid antitoxin. By this method they attempted and think they have succeeded in producing experimentally, active immunity against typhoid. Rossi,³⁷ from his study of the immunizing antibodies in the serum of eight typhoids was unable to detect any close connection between the agglutins and the anti-bodies of typhoid. There are few reports in the literature concerning the serum treatment of this

disease. Among the most noted are the following: Chanpemesse³⁸ showed by tables the average mortality of typhoid in the hospitals of Paris for five years, in 3,595 cases as 17.3 per cent. In the hospital, Bastion, in 712 typhoids treated with antityphoid serum the mortality was 3.7 per cent. Of the unfavorable cases death was due to the complication of perforation, pneumonia, gangrene of the mouth, rupture of aneurism, cancer of the kidney and gangrenous pleurisy. Hemorrhage did not cause a death. The only treatment used, with the exception of the serum, was calcium chloride. In the nine perforations, the serum was instituted late in the course. This never occurred in those cases in which the serum was given in the first week. All the patients having the serum the first week recovered, without exception. Bruanan³⁹ reported the results of the use of antityphoid serum in 100 children from 3 to 16 years old. Mortality in his service with other methods was 17 per cent, but under the serum treatment it dropped to 3 per cent. In the fatal cases the serum treatment had not been applied until late. He said it had an unmistakably favorable action on the disease. Josias, speaking from his experience with 182 cases of typhoid in children in which the serum was used, said he was convinced that the outlook for a typhoid patient was much better when the serum was injected as an adjuvant to the usual measures. His mortality was about the same as Bruanan's—3 per cent. He confirmed its harmlessness.

Britt⁴⁰ suggested that .02 cc. culture of 10,000,000 typhoid bacilli should be used as the dose for a therapeutic vaccination of typhoid. The amount should be gauged so as to produce as few constitutional and local symptoms as possible, and also controlled by the opsonic index. No cases were reported. Clarke,⁴¹ from the study of 33 cases of typhoid, gave the following conclusions regarding the typho-opsonic index. A rise in the index occurs during a typhoid infection. It varies from day to day. It is high early in the disease, decreases with a falling temperature, and rises with convalescence. It resists a temperature of 30 degrees for 30 minutes; for this reason one can heat to 50 degrees C. in order to destroy the effect of the serum. As it appeared early it seemed likely that it would prove valuable in diagnosis.

EXOPHTHALMIC GOITER.—This has been one of the newer ventures of the more modern therapy. Thyroidectin has been used with some success in the treatment of this disease. Beebe and Rogers⁴² conjointly worked out a serum which they believe will ultimately prove of great value in the treatment of this disease. They now designate two kinds of serum, according to the kind of glands inoculated, viz: (1) Normal serum obtained by inoculating animals with the combined nucleo-proteids and thyroglobins separated from the normal thyroid gland; (2) pathological serum, obtained by inoculating the combined nucleo-proteids and thyroglobins of the pathologic or exophthalmic thyroid. They found the

large grey male buck of the Belgian hare species could be relied upon to give the most uniform serum. The serum is standardized by agglutinating reaction showing its cytotoxic activity. They reported 90 cases under treatment of which 23 have been cured of all symptoms; 52 improved; 11 still in doubt, and 4 fatalities. Beebe's conclusions were as follows: "The serum is an agent of considerable value. Only a small percentage of the cases treated were acute. The statistics include all cases treated, and the number of instances of improvement are so large that they cannot be ascribed to coincidence. Under favorable conditions much can be accomplished by careful serum therapy." Waterman⁴³ obtained from the serum treatment of 5 cases of Graves' disease, 2 cured, 2 improved and 1 unimproved. Heince⁴⁴ reported unsatisfactory results in the treatment of 6 cases of Graves' disease, with the serum of thyroidectomized goats.

Elsner Weisman⁴⁵ presented the preliminary report of the study of the therapeutic action of antithyroidin in the treatment of ophthalmic goiter. In all their cases this served to relieve one or more of the symptoms, and they were rewarded by cures in a number of cases. They said that this therapy is entirely harmless and in no case have they had occasion to regret the trial of antithyroidin. Their method was to administer the serum night and morning in doses of from 15 to 30 cc. in raspberry syrup, water, or mixture of orange. After its administration for several weeks, it was discontinued for a day or two at a time. Prolonged treatment is necessary in some cases.

SYPHILIS.—Next to tuberculosis, this disease has received more attention from the point of view of its diagnosis and treatment by means of a serum. The experiments of student Maisonneuve, who inoculated himself with syphilitic virus and then treated himself with calomel-lanolin (33 to 25 per cent), after the method which has been proven experimentally by Metchnikoff and Oroux to be effective on monkeys, must be credited equal to those of Hunter. This student has been absolutely free from any sign of syphilis one year after the date of inoculation. Another experiment on man is reported in the communication of these men,⁴⁶ which goes to prove the attenuation of the virus when it is passed through monkeys. A year ago an assistant contracted a specific ulcer on the lip from the inoculated monkeys, which, when re-inoculated in the monkey developed typical syphilitic lesions with a number of spirochetes. Inoculation of anthropoid apes was negative, which confirms the accepted evidence that the passage of human virus through the lower monkeys attenuates its virulency so that it fails to produce typical signs when injected into man or higher monkeys. The assistant has been kept under close observation by Fournier, but no indications for syphilitic treatment have presented themselves. Another man 79 years old, free from syphilis, allowed himself to be inoculated with virus from a human chancre after five passages through the monkey organism. Two minute papules developed at the site

of inoculation but soon subsided. No other signs of syphilis have developed during the course of the year. Rossi and Cipollina⁴⁷ reported their total experience with the serum treatment of 50 cases. They gave detailed reports of a case of osteoperiostitis of the skull which has resisted other specific treatment, as cured, and also cases of early tabes in which this treatment relieved the lancinating pain and benefitted the general condition.

The sero-diagnosis of syphilis is merely mentioned because of the interesting work done along this line within the past year. Wassermann and Paulet,⁴⁸ for instance, reported on the biologic test in 41 cases of general paresis, in 30 of which the cerebro-spinal fluid when mixed with an extract of liver and spleen of syphilitic fetuses, resulted in an unmistakable arrest of the hemolysis. These tests were negative in non-syphilitic patients. They think the test demonstrates the presence of specific anti-substances in the spinal fluid in the majority of paralytics.

CEREBROSPINAL MENINGITIS.—While the production of the serum for this disease has not been accomplished, the experimental research of the past year went far towards perfecting methods for its development. Flexner⁴⁹ first succeeded in producing cerebro-spinal meningitis in monkeys, then an antiserum was produced by the inoculation of rabbits, goats and large monkeys. His conclusions regarding these experiments are as follows: "In how far the results obtained on guinea pigs and monkeys can be applied to the prevention and the treatment of cerebro-spinal meningitis in man, is not safe to predict. Should further experiments show that the serum can modify favorably the disease in monkeys the case would not be without hope. I do not think that the injection into the spinal column of man of the alien serum should be undertaken until the physiological action has been worked out in detail in monkeys." Jochmann⁵⁰ succeeded in producing a serum which he claims gave good results in 17 cases of cerebro-spinal meningitis. The injections were made subcutaneously and by lumbar puncture, and their harmlessness apparently established. Wassermann and Koler⁵¹ have obtained a serum from the inoculation of horses from which they claim to have derived specific action in various ways. Their findings were controlled by the hemolytic test, and are constant and conclusive. They do not hesitate to advise its use in treatment and prophylaxis, in doses of 10 cc. as early as possible. This dose has proved harmless in animals.

HYDROPHOBIA.—The past year, as borne out by various statistics, has further established the action of Pasteur's treatment as an almost absolutely certain prophylactic measure for this disease. No active immunization has proved successful in this disease. Pampoukis and Remlinge⁵² said that the paralysis which has been present in a few cases is due to the rabbit toxin in the emulsion which has a similar action to the diphtheric toxin in inducing paralysis.

CHOLERA, PLAGUE AND PERTUSSIS.—MacFayden⁵³ conducted experiments that show (1) that acutely toxic cellular products possessing active immunizing substances can be obtained from the cholera organism by the methods employed; (2) that an antibody can be produced from that primary poison; (3) that the antitoxic power of the serum can be raised to a marked degree; (4) that the serum has antitoxic, agglutinating and antibacterial properties; (5) that there is an intimate relationship between its virulence and toxicity; (6) that the antitoxin is readily destroyed from 50-60 C. Vaccination treatment for this disease is expected to come from the establishment of these precepts. Kolle⁵⁴ reported successful results from inoculation of 42 men with culture of living Plague bacilli, which had been attenuated in a temperature of 42-43 C. After these protective inoculations the men were kept under observation for four months and the method was fully established as being absolutely harmless. The experiments conducted by Lamb and Foster⁵⁵ show that the normal mammalian serum is devoid of any bacterial action on the bacillus pestis. Bordett and Gengou⁵⁶ reported the discovery of specific bacillus of pertussis. This was agglutinated by the blood of convalescent patients and not by the blood of patients having had whooping cough. Experiments in the line of an effective serum of active immunization are under way.

ANEIMIA.—Nomsa's⁵⁷ experiments with four cases treated with prepared anti-anemic serum were not promising. Although the treatment caused transient increase in the number of figured elements in the blood, no permanent results were apparent. Foa,⁵⁸ on the research of the effect of vaccine cytotoxic serum on the blood forming organs was impressed by the variation in the reaction by different species of animals. Among the most interesting results he records the mononuclear activity displayed by certain hemolytic leucotoxic serums and the prevailing lymphocytic character assumed by the spleen and bone marrow under the action of splenotoxic serum.

BIBLIOGRAPHY.

1. Francine.—Pulmonary Tuberculosis, 1906, Text D. 61.
2. Trudeau.—Amer. Jour. Med. Sci., 1906.
3. Beraneck.—International Congress of Tuberculosis, Paris, 1905.
4. Maraglino.—Gazetta degli Ospedli, Milan, Vol. XVII, No. 108.
5. Walsh, Stanton & Landis.—Second Annual Report of Phipps Inst.
6. Patterson.—Lancet, London, Aug. 22.
7. Hoffa.—Berlin. Klin. Wochenschr., Vol. LXIII, No. 42.
8. Low.—Lancet, London, July 14.
9. Pogue.—Med. Record, New York.
10. Luedke.—Beitr. zur Klin. d. Tubercul. Wuertzb., Vol. VI, No. 1.
11. Ganghoefner.—Jahrbuch. f. Kinderheilkund, Vol. XIII, No. 5.
12. Lorenz.—Beitr. zur Klin. d. Tubercul. Wuertzb., Vol. V, No. 1.
13. Presse Medicale, Paris, Dec. 6.
14. Bungern.—Munch. Med. Woch., No. 52.
15. British Med. Jour., Aug. 18.
16. Maag.—Hospitacidne, Copenhagen, Vol. XLVIII, No. 49.
17. Visson.—Lancet, London, Oct. 6.

18. Wilbur.—*Amer. Jour. Med. Science*, Aug.
19. Lopez.—*Amer. Med., Phil.*, Jan. 27.
20. Matri.—*Reforma Medica*, Naples, Vol. XXI, No. 35.
21. Wolff.—*Münch. Med. Woch.*, Vol. LIII, No. 43.
22. Scherck.—*Jour. Amer. Med. Assoc.*, Vol. XLVII, No. 7.
23. Bergola.—*Reforma Med.*, Naples, Vol. XXI, No. 35.
24. Kinoium.—*Med. Record*, New York, Oct. 20.
25. Cooley.—*Detroit Med. Jour.*, June.
26. Rottenger & Browning.—*Jour. of Amer. Med. Assoc.*
27. Barney.—*Boston Med. & Sur. Jour.*, Aug 3.
28. Fromme.—*Münch. Med. Wochenschr.*, Vol. LII, No. 52.
29. Powers.—*American Surg. Assoc.*, Cleveland.
30. Raw.—*Lancet*, London, April 21.
31. MacFayden.—*British Med Jour.*, Sept. 29.
32. Welsch.—*Western Med. Review*, Nov.
33. Rosenow.—*Jour. Infectious Diseases*, Sept. 29.
34. Nacrides.—*Brace Medicale Syra Greece*, Vol. VI, No. 9-10.
35. Balliard Dopfer.—*Annals de l'Institute Pasteur*, Vol. XX, No. 4.
36. MacFayden.—*British Med. Jour.*, April 21.
37. Rossi.—*Reforma Med.*, Naples, Vol. XXI, No. 41.
38. Chanpemesse.—*Presse Medical*, Paris, Vol. XIV, No. 16.
39. Bruanan.—*Bulletin de l'Academie de Medicine*, Vol. LXX, Nos. 9 and 10.
40. Britt.—*Jour. Royal Army and Med. Corp.*, London, Sept.
41. Clarke.—*Amer. Med. Jour.*, Vol. LXVII, No. 26.
42. Beebe, Rogers.—*Jour. Amer. Med. Assoc.*, Vol. XLVII, No. 9.
43. Watermann.—*Boston Med. Jour.*, Aug. 16.
44. Heince.—*Deutch. Med. Wochschr.*, Vol. XXXII, No. 19.
45. Elsner Weisman.—*New York State Jour. Med.*, June.
46. Mechnikoff & Oroux.—*Annals de l'Institute Pasteur*, Paris, Vol. XX, No. 10.
47. Rossi & Cipollina.—*Gazetta degli Ospedli*, Milan, Vol. XXVII, Nos. 126-132.
48. Wasserman & Paulet.—*Deut. Med. Wochschr.*, Vol. XXXII, No. 44.
49. Flexner.—*Jour. Amer. Med. Assoc.*, Vol. XLVII, No. 8.
50. Jochmann.—*Deut. Med. Wochschr.*, Vol. XXXII, No. 20.
51. Wassermann & Kole.—*Deut. Med. Woch.*, Vol. XXXII, No. 16.
52. Pampoukis & Remlinge.—*Greece Medicale Syracr. ece.*
53. MacFayden.—*Lancet*, London, Oct. 21.
54. Kolle.—*Deut. Med. Woch.*, Vol. XXXII, No. 11.
55. Lamb & Foster.—*Lancet*, London, July 7.
56. Bordett & Gengou.—*Annales de l'Institute Pasteur*, Paris, Vol. XX.
57. Nomsa.—*Reforma Med.* Naples, Vol. XXI, No. 48.
58. Foa.—*Arch. Per. le Science Mediche*, Purim, Vol. XXIX, No. 6.

GENITO-URINARY SURGERY.

IN CHARGE OFH. MCC. JOHNSON, M. D.

Recognizing the difficulty attendant upon demonstrating the tubercle bacillus in urine, Columbino¹ has endeavored to find additional means to enable us to find it. He has observed that the white globules of the urinary sediment in tuberculous conditions, present a characteristic appearance. As observed in the unstained specimen under the microscope, the leucocyte is elongated, polyhedral and crenated, the contour being irregular. Sometimes we will observe at the periphery little balls of protoplasm, which seem inclined to detach themselves from the leucocyte, the element seemingly having been fractured. If we find leucocytes thus deformed, mixed with red blood cells, we may say that it is a question of tuberculosis.

If now the specimen is fixed and stained, we will observe that the protoplasm of certain polynuclear corpuscles is reduced about the nucleus. We may even find nuclei almost free. A quite striking characteristic is the occurrence of multiple vacuoles in the protoplasm, the nucleus responding less energetically to reagents.

In affections other than tubercular, the form of the leucocyte is normal, the contour regular, and they color as those in normal blood. The examination of the fresh specimen is more satisfactory than those of the stained, because of the possibilities of artefacts.

In those cases of primary tuberculous kidney in women, in which the cardinal symptoms are absent, and in which the disease is more or less latent, the cystoscopic view, according to Fenwick², will lead to proper conclusions.

Special attention is called to the fact that a displaced, retracted ureteric orifice, and a bladder only slightly eroded, mean a tuberculous kidney; and that, furthermore, the location of the disease in the kidney can be accurately determined, if there is an absence of other infection.

There will be found dense adhesions at the upper and lower poles of the kidney, the ureter thickened and the upper and lower calices eroded by tuberculous ulceration.

The retracted, displaced ureteric orifice points to a thickened ureter, shortening lengthwise. This involves narrowing and obstruction of the channel, with back pressure of the urine upon the thickened and yielding pelvis, and a tough renal parenchyma. The back pressure of the pelvis invariably means that the upper and lower calices will suffer, and that consequently the stress of the tuberculosis must fall chiefly on these areas thus traumatized.

A retracted ureter always means a thickened lead-pencil-sized ureter,

which can be felt per vaginam; but a thickened ureter is not always a retracted ureter, neither does it always mean tuberculosis. It is the extreme shortening and retraction of the ureter and of the orifice which seems characteristic of this particular type of renal tuberculosis.

Bevan³ tells us that tuberculosis of the genito-urinary tract, with few exceptions, begins in the kidney, prostate, epididymis or tubes, and that it is primary in these only in the sense that in the individual affected, they are the foreshadowing and important foci of the disease. They are strictly secondary to a small, unimportant focus in the lymphatic glands, bones or lungs, the infection occurring through the blood.

Renal tuberculosis can and does undoubtedly run at times a silent course, without giving rise to any symptoms, even when a single kidney has been entirely destroyed; yet by attention to the symptoms, and by the use of important modern methods of diagnosis, we can generally arrive at a correct conclusion. If the disease is limited to one kidney, nephrectomy is the only operation to be considered. Nephrotomy with drainage should be used simply as a palliative operation, and resection of the kidney should be practically discarded from consideration.

When operating for kidney tuberculosis, it is unnecessary to remove the diseased ureter, as it gradually recovers after the removal of the primary foci in the kidney proper.

There are no more satisfactory results in the whole field of surgery than those which are obtained by an early nephrectomy in unilateral kidney tuberculosis.

We are informed by Whitacre⁴ that while genital and kidney tuberculosis may occur simultaneously and consecutively from hæmatogenous infection, yet the ascending infection is not an important factor. In a number of cases, the lesion in the kidney is unilateral, while the opposite kidney remains free from tuberculosis infection for a long time. The clinical course is towards progressive extension to other parts of the kidney and body.

According to Garceau,⁵ early cases of tuberculosis of the urinary tract in women are best treated by a change of climate and attention to the requisite amount of fresh air, nourishment, etc., cures having been recorded by these means.

Again, the very advanced cases of urinary tuberculosis, in which the whole urinary tract has been invaded, and both kidneys are diseased, demand a purely hygienic course of treatment.

Topical applications in cases of vesical tuberculosis, in which the urinary tubercles have not yet appeared (the only abnormality being, as seen by the cystoscope, collections of bright red patches), are intolerably painful, and can do no good, for the reason that they do not reach the site of the trouble, the germs being imbedded in the tissues.

In the second stage, that of tubercle formation, with attendant caseation

and ulcer formation, a vast amount of good can be accomplished by local applications, such as corrosive sublimate and nitrate of silver, it sometimes requiring months before any decided improvement is noticed.

In a case of primary tuberculosis of the bladder, Kreissl⁶ obtained a cure by local treatment. It consisted of applications of 5 per cent iodoform guaiacol suspensions, alternating with bichloride solutions to the bladder and the lower segment of the ureter. The subjective symptoms improved rapidly, and the ulcers healed within a month, the tubercles disappearing within two months.

Considering the damage inflicted upon the kidney structure by increased tension within the capsule, and by continued traction of a thickened capsule, Harrison⁷ believes that surgical intervention for the purpose of relieving tension, is indicated in some forms of nephritis. It is called for where there are progressive signs of kidney deterioration, as shown by the persistence or increase of albumen when it should be disappearing from the urine. It is called for where there is suppression of urine or approach to this state; also where marked disturbance of the heart and circulatory system occurs in the course of inflammatory renal disorders. It is not absolutely material to the issue which kidney is selected for operation, unless there is something to indicate it, as relief of one aids the other.

The pathogenetic theory of eclampsia, according to Pousson and Chambrelent,⁸ generally accepted today, is that of the blood intoxication with poison, the original nature of which is still undetermined. There is added to this toxemia lesions of the liver and kidneys, i. e., the two most power emunctories of the organism. Acting on this theory, the treatment consists in the employment of proper means to obtain purgation of the blood. The means usually employed, consisting of milk-diet, water in quantities, hypodermoclysis, etc., combats the toxemia, but neglects the lesions of the liver and kidneys, or attacks them only indirectly.

Chloride of soda is today considered harmful in uremic states, and as water elevates the blood tension in the vessels of the kidney, as well as those of other organs, it tends rather to aggravate the lesions by reason of the increased work that it places upon all the anatomic elements, and especially the epithelium.

In order to aid the ordinary means of blood-purgation, and to put an end to nephritic lesions, surgical intervention has been suggested, not to be substituted for the medical treatment, but to be recommended as a new resource added to those we already possess. In grave intoxications which have resisted medical means, surgical intervention is justifiable, and becomes advisable when there is acute nephritis. The authors regard renal decapsulation highly, but believe they have added much to the operation by employing with it an incision of the kidney, a nephrotomy. They suggest that besides the relief of tension, the abundant flow of blood that is ob-

tained by the incision itself relieves congestion of the kidney, modifies diaporesis, and favors the out-flow of the exudates and detached epithelia encountered in the canaliculi intersected by the incision. This action may be kept up for days if a drain is put in, as this permits the altered liquid secreted by the kidney to flow outward, and renders possible antiseptic lavage.

Sagols⁹ has collected seven cases, recently reported, in which, during operation, the vena cava was injured, and the vessel either sutured or ligated, out of which number four recovered and were cured. Hitherto, experimentation has absolutely rejected ligature of the inferior vena cava. In experimenting upon dogs, Purpura found that sudden ligature of the vena cava resulted in death, while slow ligature resulted in recovery of the animals, by giving time for the supplementary circulation to become established. In the three cases of total ligature of the vena cava reported as cured, the surgeons were dealing with conditions which caused gradual pressure on the vena cava, thus developing the collateral circulation gradually.

In man, anastomosis between the portal circulation and that of the vena cava will be sufficient to assure the return of the blood to the heart, after obliteration of the vessel.

In the female, the uterine and ovarian venous channels are of great importance in carrying on the collateral circulation.

From this we may conclude that there are two satisfactory methods of treatment of injury of vena cava, namely, suture and total ligature, the latter being easier of execution, and should be employed in cases of wounds of inferior vena cava, when the vessel is injured below the point of entrance to the renal veins; but when the opening occurs at the entrance of the renal vein, or above it, ligature is absolutely contraindicated.

Jungano¹⁰ finds that it is good surgical practice to do nephrectomy in cases of wound of the renal vein, rather than ligature. It is better to preserve the organism from the dangers produced by the presence of an organ undergoing degeneration than to hope for the possibility of preserving it either through the normal or abnormal collateral circulation.

Carstens¹¹ is satisfied that a movable kidney can be permanently fixed by proper technique; and that many disturbances of digestion are caused by movable kidney. Fixation relieves some of the digestive disturbances, and many of the nervous symptoms; but it cannot be expected to relieve symptoms not dependent upon the mobility of the kidney, but due to some other organic disease; so that great care should be employed to differentiate which are due to the kidney mobility.

A proper fixation will relieve the nephritis in the organ. Fixing a floating kidney does not mean that you get it into the exact position

where it was, and should be, but by fixing it high, and as near to the original site as possible, you prevent it from pulling on, or irritating other organs and the solar plexus of nerves, and you prevent a kinking or twisting of the ureter. The mortality has been nothing in 32 cases.

Da Costa¹² tells us that in many cases of movable kidney it is unwise to operate until the use of a properly applied corset is relied upon to keep the patient comfortable and safe. But in those cases of progressive mobility, where there are distinct local symptoms, operation is indicated. He uses gauze in the usual way to keep the kidney in place, with the exception that he stitches two ends of the gauze together with catgut, so that as the catgut is absorbed, the gauze may be more easily removed.

Carrieré¹³ reports eight cases of lumbar puncture for nervous uremia, in four of which the results were absolutely negative, while in the other four they were favorable. He regards lumbar puncture, associated with the usual medications for nervous uremia, as encouraging when the subjects are young, in cases of acute nephritis, and where the uremia has existed for only a short time.

From microscopic examination of the brain tissue removed post-mortem in uremic cases, the author finds marked changes in the tissues, such as fragmentation of the nuclei and vacuolation of the cells, from which it is evident that while the blood may be overcharged with toxic substances, yet the accidents of nervous uremia are largely due to the hypertoxia of the cephalorachidian fluid; and this hypertoxia he has demonstrated through animal injection.

There are cases, however, in which the exciting cause of the uremia is cerebral edema; others in which it seems to be due to compression by the cephalorachidian fluid; and others still in which the hypertoxicity of this liquid cannot be doubted.

Therefore, lumbar puncture seems to be applicable in these cases, whatever the exciting cause.

We learn from Carl Beck¹⁴ that a definite diagnosis in suspected lithiasis can be made by means of the skiagraph. Any errors made are of the individual, not of the method. In this work, it is of importance to bring the calculus area as near to the plate as possible, and to make use of a tubular diaphragm, which permits the passage of the focal rays alone. The disadvantage of the tubular diaphragm is that only small areas can be shown at a time. It is evident, therefore, that in a skiagraph of the urinary tract, a general exposure must precede that of the limited area, since it cannot be known beforehand whether the suspected calculi are situated in one or both kidneys, or in the ureters. His experience with the Roentgen method has suggested to him that it is invariably necessary to skiagraph the renal regions whenever vesical calculus is suspected,

Since he has adopted this principle, he has found renal calculi to be present, also, whenever there was a concretion in the bladder.

Deaver¹⁵ says since accurate methods of making a diagnosis in urinary surgery have been in vogue, the frequency with which renal calculi are met with has become very widely appreciated. If in the ureter, the point that chiefly concerns us is to determine at what point it is arrested. The two most valuable aids to the diagnosis are tenderness at the site of impaction and information gained by a technically perfect skiagraph.

While he regards the x-ray as of much value in locating stones, he cautions us not to forget the rule of surgery in doubtful cases, to first explore the kidney through the loin, and then to pass a sound down the ureter before concluding the operation. A skiagraph to be of value must throw a shadow of tissues less dense than the least dense calculus: and it is necessary to see the shadows of the psoas muscle, to make sure that no calculus is present.

It seems to the author that the dangers which may ensue from neglect of ureteral calculus are greater than those which attend its removal by operation, even though the calculi produce no symptoms.

It is advised by Lilienthal¹⁶ that great care should be used in reading the skiagraphs made for renal calculus, as other opaque bodies in the same locality, such as a calcified lymph nodule, sesamoid bone, a lime-plate in the iliac artery, or even a foreign body in the contents of the rectum, may be misleading.

Some use may be made of the cystoscope, phonophore, wax-tipped catheter, and observation of the ureteral orifices, in conjunction with the ordinary symptoms of calculus. He considers pain, or hemorrhage, or both, as indications for operation, and believes the usual abdominal incision for extra-peritoneal exposure of the ureter, the preferable route.

Beer¹⁷ speaks very highly of the indigo-carmin test as an aid to the diagnosis of ureteral occlusions, citing several cases in which, though the ureter seemed by catheterization to be occluded, yet the indigo-carmin test showed them to be patent; and while neither ureteral catheterization nor the indigo-carmin test alone are adequate to diagnose occlusions of the ureter, yet, used together, we have a very satisfactory method of determining the presence or absence of a ureteral obstruction, as well as the degree of patency of the ureter.

Cumstor¹⁸ considers anuria, and especially that in connection with renal calculus, saying that this is the most frequent cause of it, and that it should always be borne in mind that the diagnosis of these cases can ordinarily be made from the history, because the patients generally have been previously troubled by urinary symptoms. Colicky pains usually precede the passage of a stone, but every symptom may be lacking, the anuria suddenly developing without warning.

The possibility of both ureters being obstructed should not be over-

looked. In this case, it is most important to determine the kidney last affected, which is usually the one that was the seat of the last pain, is the most tender on palpation, and over which the abdominal walls present the greatest reflex rigidity, and should be the one selected for operation. nephrotomy should be performed early.

Deschamps¹⁹ has found that antipyrin in 5 per cent. to 10 per cent. emulsion introduced into the bladder is of signal service in arresting hemorrhage from the bladder in prostatics.

According to Meyer, the Bottini operation is now generally recognized as having strict indication in the treatment of prostatic hypertrophy. Its encouraging results are especially noticeable in those cases where operation with the knife would in all probability have caused the death of the patient. Especially is it indicated in those cases where other organic diseases make it appear imprudent to undertake prostatectomy, or where this operation is absolutely refused; and in considering the mortality from the Bottini operation, it must be remembered that in many cases in which the Bottini operation is done, prostatectomy is considered either inadvisable or impossible. He regards the Bottini as inadvisable in the presence of a median lobe.

Guiteras²⁰ tells us that suprapubic prostatectomy holds the same relation to the perineal operation that abdominal hysterectomy does to vaginal, in that it is the better surgical procedure; and in most cases, suprapubic prostatectomy is preferable to the perineal, on account of the ultimate operative results, the purpose for which the operation is performed, although the mortality is higher; for it is for the relief of the gnawing symptoms and the dangerous complications that we operate.

Where the state of debility of the patient is such that radical primary prostatectomy would be attended by great risk, Chetwood²¹ states that excellent results are obtained by performing the operation in two stages: first, draining, until the patient recuperates his powers of resistance; and then performing the operation.

Loumeau²² held an autopsy on a patient who died three days after a prostatectomy by the method of Freyer. In this case, the entire gland was extirpated in one piece, the urethral prostatic mass coming away as a whole, leaving, however, small islands of the gland behind. In this procedure, the internal sphincter and the prostatic urethra were removed as far forward as the verumontanum, the ejaculatory duct being torn across. There were no signs of any infiltration of urine from the prostatic wound.

After suprapubic prostatectomy, the prostatic cavity is reformed in two different manners, according to whether it is a subtotal prostatectomy, with preservation of the prostatic urethra, or a total prostatectomy, comprising the gland and prostatic canal. In the first case, the walls of the

prostatic urethra spread out, until they come in contact with the walls of the prostatic cavity, forming somewhat of a funnel, the bowl of which is at the vesical neck, and the narrow part continuous with the membranous sphincter of the urethra. In the second case, the bladder and prostatic cavity form together a cavity in the shape of a reversed gourd, the large part corresponding to the bladder, and the anterior, or smaller part, to the prostatic region. In both cases, the prostatic cavity is made a part of the vesical reservoir. In the latter case, the physiological neck is transformed to the membranous sphincter—which is indeed the true sphincter of the bladder—the integrity of which is indispensable to continence after prostatectomy. It appears that the prostatic region is recovered by mucous membrane, which is continuous with that of the bladder.

It is the physician's duty, says Barker,²³ when one is called to relieve a patient's first retention, in cases of prostatic hypertrophy, to first use the catheter and relieve his patient, and then and there to impress upon him the necessity of the removal of the gland as quickly as the patient can get to the hospital. It is also his duty to return to his patient every eight hours, and draw the urine, until the patient goes to the hospital. The old practice of putting the catheter into the hands of the patient, and teaching him its use, should be condemned; for at this time the patient is in such a condition usually that prostatectomy is to him a benign operation, whereas should the physician fail to advise properly at this time, he has lost his opportunity, and can do little but harm, for, the patient having learned the use of the catheter, this condition may subside, and lead the patient to believe that he is cured, when, indeed, the danger has been but delayed. Catheter life becomes continuous, and infection invariably follows, sooner or later. Cystitis, with all of its torments, harrasses the patient, until, when a physical and mental wreck, he seeks surgical aid, perhaps now for the first time advised by his physician to take advantage of it. It is a compliment to surgery that it restores to health and comfort a very large percentage of these patients, even at this time.

Le Fur²⁴ has observed quite a number of cases of prostatism between the ages of 35 and 50, which he designates "young prostatics." Even in these comparatively young men, we find two distinct types of inflamed prostates—the one hard, often small, sometimes uniformly hard, but more frequently indurated in places; the other large, soft, vascular and congested.

Prostatism is inflammatory in its origin, whether the ultimate result be neoplastic, hypertrophy or atrophy. The hard, small prostates develop more rapidly and offer a worse prognosis than the other variety. Much benefit has been derived from high dilatations of the posterior urethra, combined with ordinary methods. There is no doubt but that by applying radical principles of treatment, we may observe a diminution in the cases of prostatism and prostatic hypertrophy.

Stern²⁵ mentions some untoward effects of prostatic massage. During the course of treatment, the patients developed pain in the perineum, nates and posterior region of the thigh, shortly after the institution of prostatic massage, the continuation of which greatly aggravated the condition, while its discontinuance, combined with rest and appropriate local and internal treatment, was followed by recovery in from two to four weeks.

He is acquainted with numerous cases, in which the spreading of infection by dissemination of pathological glandular contents was ushered in, or facilitated by, massage; and in some cases sciatica and inflammation, or irritation of other nerves may supervene in the wake of prostatic massage.

Watson²⁶ proposed to substitute bilateral lumbar nephrotomy, with ligation of the ureters, and the establishment of renal fistulæ, in cases of bladder tumor, for ureteral implantation in connection with bladder resection, or total extirpation; and that the bladder operation be done after an interval, and not at the same time as the nephrotomy.

So far, operative procedures for benign and malignant tumors of the bladder have proved more or less unsatisfactory, showing a high mortality and frequency of recurrence, due largely to the failure to operate soon enough and radically enough, in both the benign and the malignant tumors, and to the defects inherent in ureteral implantation.

For inoperable bladder cases, he suggests that the nephrotomy could be utilized for securing the relief that might be expected to result from diverting the urine from the bladder. In suitable cases, total extirpation of the bladder is to follow the nephrotomy, a month or so later.

He further suggests that in extirpating the bladder, the organ be first approached from the perineum, separating the rectum from the prostate, then opening the peritoneum suprapubically, and removing the bladder unopened through this cut—a procedure which offers us much greater facility for accomplishing the extirpation of structures involved, and secures much greater thoroughness than if the operation is undertaken extraperitoneally.

Wallace²⁷ tells us that symptomless hæmaturia is in the majority of cases the first symptom of vesical tumor, and that pedunculated tumors are not more favorable for treatment than sessile implanted tumors of a similar nature. While removal of the tumor, in a certain proportion of cases can be complete, and no recurrence takes place, yet even if recurrence does occur, the patient is for a time relieved from distressing symptoms, and life is prolonged in greater comfort. In cases unfavorable for cure, operation should be delayed until the symptoms are so severe that the patient's life is rendered very unpleasant, and his health is suffering.

In all cases of vesical tumor, whether the operation be curative or palliative in its object, the suprapubic route is the best to adopt.

From a study by Davis²⁸ of 41 cases of primary tumors of the bladder, taken from the clinical records of the Massachusetts General Hospital, he has observed that stone in the bladder is not an etiological factor of importance in the causation of these tumors..

In the determination of the benign or malignant character of papillary epithelial tumors of the bladder, the condition of the underlying bladder wall in regard to epithelial infiltration is a most satisfactory and reliable guide. Papillary tumors of the bladder, proved to be histologically malign, may readily lead to a fatal result if let alone. Surgical intervention at the proper time, in the case of pedunculated papillary tumors of the bladder, offers a very fair chance of long immunity, if not of permanent cure.

Surgical intervention should consist of excision of the tumor in toto, with the margin of the bladder wall at its base, including mucosa, sub-mucosa and muscularis in part, and the defect in the bladder wall closed with sutures.

To avoid the inconveniences and disadvantages of vesico-vaginal fistulæ made in the treatment of certain cystalgias, Rochet²⁹ proposes, and has undertaken in one case, with good results, the following procedure: a transverse cut one and one-half to two centimeters wide is made through the vaginal mucosa, a finger's breadth behind the urethral meatus. The vaginal mucosa is dissected up, until the sphincter of the bladder is reached, when a section of the sphincter muscle of the bladder is removed. Because of the intimate connection of the muscles to the vesical mucosa the latter is usually injured, and urinary incontinence is thus established. But as the route is not direct, the vesical and vaginal openings being distant from one another, the fistula formed will easily cicatrize. It takes some time for the sphincter ends to unite, so that the incontinence produced will relieve the condition; as the pains will disappear, and the local and general condition improve.

Certain vesical disturbances are quite frequently observed with women, sometimes very painful and rebellious to treatment, of which the interesting point is that they arise without a clear reason, and may resemble, at least in appearance, cystitis due to ordinary causes. There are sufficiently common symptoms to classify them under one head—cystalgia of women. They are very rarely seen in early youth, but are found by preference in the later years of life; and when in these cases, as in others, the ordinary means of treatment at our disposal fail, surgery offers relief, and in the old and stubborn cases urethral dilatations and internal sections of the sphincter, as described above, are of signal service.

Garceau³⁰ suggests cystotomy for cases of cystitis in the female, be they of nervous origin, tubercular, or simply chronic cystitis, with or without infection of the upper urinary passages. In tuberculosis of the bladder, in the incipient and long-standing cases, he feels that with a cystotomy,

combined with proper treatment, a cure should be expected. In cases of non-tuberculous cystitis, with infection of the upper urinary passages, the cure of the disease of the upper passages goes a great way towards eradicating the cystitis, but a great many patients will not submit to a serious kidney operation. A cystotomy relieves the patient from her suffering in a great measure, and if the opening is allowed to remain, the kidney will, in some cases at least, atrophy, and the fistula may be closed.

Trendelenburg³¹ endeavors to aid the direct union of the freshened edges in cases of ectopia vesicæ, by producing a separation of the pelvic bones at the sacro-iliac synchondrosis, in order to provide for a closer approximation of the two halves of the pelvis at the symphysis, and consequently of the edges of the defect. He mentions three cases of bladder ectopia, which were operated upon several years ago by this method, with excellent results. In all three patients, the defect, which was complete, was securely closed, and no fistulous openings are present. The bladder when distended consists of a spherical cavity, lined with mucous membrane; and while there is some tendency to the formation of small concretions in the bladder, it is by no means as marked as in certain cases operated on by Thiersch, which the author has had occasion to examine.

He feels that it would be wise to go back to the old idea advanced by Demmé and Passavant, and to make an attempt to bring about the desired changes in the bony structures of the pelvis by orthopedic measures. Rapidly growing osseous tissues of the young do not offer much resistance to even slight degrees of pressure, provided it is constantly applied. The bone yields, and gradually undergoes marked alteration in form and contour, as illustrated by cases of congenital macroglossia, and by the feet of the Chinese women.

There seems to be no good reason why, with the exercise of time and patience, the infantile pelvis may not be similarly moulded in cases of vesical ectopia. This would produce practically the same conditions which are present in epispadias associated with a partial ectopia of the bladder; and we should then expect to have some satisfactory operative results, as in the less severe types of the deformity.

Moynihan³² reports the relief of a case of extroversion of the bladder by transplantation into the rectum. The ureters, with the portion of the bladder wall surrounding them, were turned into the rectum and stitched there, the ureters having previously been catheterized. All urine escaped by the rectum, and at the end of a month the control was perfect. Several months after the operation, the interval between the acts of emptying the rectum was three to five hours; the urine was normal on examination, and no line of junction could be felt between the mucous membrane of what had been the bladder and the mucous membrane of the rectum.

In operating for the cure of hydrocele, Belfield³³ proposes, after evacuation of the fluid with trocar and canula, to distend the sac with warm salt solution, until the escaping water shows only a trace of albumen by the nitric acid test. An ounce or more—according to the capacity of the sac—of carbolic acid—pure or 95 per cent—is injected, the scrotum thoroughly manipulated to secure contact throughout, and the acid allowed to escape. The residual acid is neutralized by the injection of alcohol. After the escape of the latter, the canula is withdrawn, and the punctures are sealed. The author has devised a special canula for this operation.

Belfield³⁴ suggests direct irrigation and drainage through the vas, in certain diseases of the seminal duct and vesicle, and claims excellent results have followed this method of treatment. The vas is brought up against the skin of the scrotum, an incision made down and into it, and the cut edges then stitched to the skin, creating a fistula, through which solutions may be injected into the vesicle. When desired, this fistula may be closed, and the continuity of the canal restored.

In spite of the over-enthusiasm, according to Lydston,³⁵ which attended the introduction of cord operations, it is not fair to push them aside simply because they did not fulfill the extravagant expectations of those who first advocated them. Vesectomy has a certain range of application in sexual neurasthenia, for spermatophobias, genuine spermatorrhea and pseudo-spermatorrhea. In intractable chronic prostatitis and seminal vesiculitis, it is of the greatest value. Its beneficial effects are due not only to the change which it induces in the circulation, and innervation of the prostate, but also to the rest which it secures to the seminal vesicals. After the operation has accomplished its purpose, the continuity of the ducts may be re-established.

Cases of seminal vesiculitis are often so profoundly neurasthenic that no surgical procedure is likely to give relief; but in these cases especially, vesectomy should be given a trial before the major operation of vesiculotomy is resorted to. A very important field of usefulness for vesectomy is recurrent epididymitis. In several cases of enlargement of the prostate, in which the patients were greatly debilitated by frequent and severe hemorrhages, vesectomy was successful in relieving them, or checking them, until the patients were able to gain sufficient strength to endure prostatectomy.

Bazet³⁶ advises that the epididymis should be incised, to obtain the quickest relief, and also the greatest, in the treatment of blennorrhagic epididymitis. Like appendicitis, this affection ought to be considered a surgical one, as in its evolution and morbid process it is contained in a closed cavity, and the septic secretions cannot be drained.

Hilton³⁷ reports a case of teratoma of the inguino-scrotal region, which very much resembled a hernia.

Mark³⁸ considers the air-dilating urethroscope of great advantage over the non-dilating instrument. With the air-instrument, the folds of the urethra can be obliterated, without producing traumatism; the resulting hemorrhage, especially in the posterior urethra, which interferes with the view, is not encountered; a more extensive mucous surface is brought into view; and points in a considerable area may be contrasted. A minimum amount of manipulation is necessary, and if the urethroscope is brought beyond the point to which it is desirable to return, the air dilates the urethra beyond the distal extremity of the tube, which may then be pushed back without difficulty or discomfort.

Lydston³⁹ says that resection of the dorsal vein of the penis cannot be successfully done subcutaneously, but, as it is an operation requiring accurate anatomical knowledge, a careful and painstaking dissection is necessary for its ligation and resection. One of the important elements in the cure of impotency by properly performed operation, is demonstration of its dynamic capacity through purely mechanical circulatory agencies. In a great majority of the cases of impotency that come under the observation of the surgeon a trial of the operation is advisable.

When metallic zinc is placed in the presence of nitrate of silver, according to Balzer and Tansard,⁴⁰ there is immediately produced a double decomposition of the silver salt. Nitrate of zinc is formed, and the silver is reduced to a metallic state, which is deposited wherever the zinc has been in contact with the nitrate of silver.

In order to utilize this reaction in the urethra, an instillation of from ten to twenty drops of a solution of nitrate of silver of from one to two per cent is introduced into the anterior or posterior urethra, according to the place to be treated. Immediately after the instillation of the silver, the zinc bougie is introduced into the urethra and kept there from one to two minutes, in order to allow time for the reaction to take place. The procedure is indicated in almost all cases of chronic blennorrhœa, anterior and posterior, with or without gonococci. It is advised in chronic urethro-cystitis and prostatitis, and suggested in prostaticorrhœa and spermatorrhœa.

REFERENCES.

1. Ann. des Mal. des Org. Urin., Jan. 15, 1906.
2. British Med. Jour., Jan. 27, 1906.
3. Jour. A. M. A., Oct. 6, 1906.
4. Cleveland Med. Jour., April, 1906.
5. Jour. A. M. A., Nov. 3, 1906.
6. Amer. Jour. Urol., July, 1906.
7. Amer. Jour. Urol., Feb., 1906.
8. Ann. des Mal. des Org. Urin., April 15, 1906.
9. Amer. Jour. Urol., April, 1906.
10. Ann. des Mal. des Org. Urin., Aug. 1, 1906.
11. Jour. A. M. A., May 12, 1906.
12. N. Y. Med. Jour., Aug. 4, 1906.
13. Ann. des Mal. des Org. Urin., June 1, 1906.
14. Jour. A. M. A., Dec. 23, 1905.

15. Ann. Surg., May, 1906.
16. Internat. Jour. Surg., March, 1906.
17. Ann. Surg., Oct., 1906.
18. Amer. Jour. Urol., July, 1906.
19. Ann. des Mal. des Orig. Urin., Nov. 1, 1905.
20. N. Y. Med. Jour., Sept. 22, 1906.
21. Ann. Surg., Oct., 1906.
22. Ann. des Mal. des Org. Urin., April 15, 1906.
23. N. Y. Med. Jour., Dec. 10, 1905.
24. Le Jour. de Med. et de Chir., Feb. 21, 1906.
25. Internat. Jour. Surg., July, 1906.
26. Ann. Surg., Dec., 1905.
27. Amer. Jour. Urol., Dec., 1905.
28. Ann. Surg., April, 1906.
29. Ann. des Mal. des Org. Urin., July 15, 1906.
30. Amer. Jour. Urol., Sept., 1906.
31. Ann. Surg., Aug., 1906.
32. Ann. Surg., Feb., 1906.
33. Jour. A. M. A., April 7, 1906.
34. Abst. Proceedings Am. Assn. Genito-Urinary Surg., June, 1906.
35. Jour. A. M. A., July 21, 1906.
36. Amer. Jour. Urol., May, 1906.
37. Ann. Surg., Oct., 1906.
38. Amer. Jour. Urol., May, 1906.
39. Internat. Jour. Surg., March, 1906.
40. Ann. des Mal. des Orig. Urin., May 1, 1906.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF

HUGO EHRENFEST, M. D.

PUBIOTOMY.—Pubiotomy, which in 1905 undoubtedly has been the most discussed subject of interest to the obstetrician, in 1906 still holds a prominent place in obstetric literature. The extreme enthusiasm of the past year has been somewhat subdued by the reports of a few unfavorable cases. Pubiotomy now has a mortality—in the latest reports of the year 1905 it still was an operation without a mortality. But in general the results still are satisfactory. The questions, which have been most discussed during the last year, are, how accidental injuries to the bladder could be avoided, and whether after the separation of the pubic bone immediate delivery by means of operative interference or expectant treatment are preferable.

Ruehl¹ refers to the fact that pubiotomy is not the entirely harmless operation which it has been proclaimed at first. In dwelling upon the various dangers incident to the operation he suggests means of avoiding them. The most common of the accidental injuries are those to the bladder. According to his investigations the bladder injuries may arise in four different ways. (1) Direct injury with the guide needle in introducing the Gigli saw. This can be avoided by making a small horizontal incision along the upper edge of the pubic bone and carefully introducing Doederlein's needle after the soft tissues have been pushed off the posterior surface of the bone. (2) Abnormally firm adherence of the bladder to the vaginal wall. The bladder is torn when in the course of the expulsion or extraction of the fetus the vaginal wall ruptures. (3) Abnormally firm adherence of bladder to the descending ramus of the pubic bone. The bladder is torn when the cut ends of the bone separate widely during the passage of the fetus through the pelvis. (4) The bladder is directly injured by the sharp edges of the cut ends of the bone. These three latter causes of bladder injuries, in Ruehl's opinion, can be eliminated if in every pubiotomy, before the Gigli saw is introduced, the bladder is pushed off the vagina and cervix, as is done in the first stage of a vaginal hysterectomy. It is interesting to note that in the discussion following the reading of this paper, most of the speakers, among them Rosthorn and Pfannenstiel, repudiated such a suggestion. All the speakers agreed, however, that pubiotomy cannot any longer be regarded an operation free of danger, and should not be performed by the general practitioner as was first suggested by its enthusiastic advocates. A very interesting point was brought out by Pfannenstiel. He thinks that after a pubiotomy a forceps extraction should not be made

in the usual way, i. e., by pulling the head upward around the symphysis as soon as it has reached the perineum. In this way the bladder is squeezed against the sharp cut ends of the pubic bone and may be injured. The head should be extracted in a downward direction. In Bumm's clinic the guide needle is introduced from below upward and the report of Hocheisen² covering 16 pubiotomies performed in this clinic, mentions one case of bladder injury. Patient recovered and the fistula healed without any interference. It seems that this favorable outcome is rather the rule if a permanent catheter is left in the bladder for about two weeks. Another instance of injury to the bladder is recorded by Semmelink,³ also with spontaneous cure. In this case the needle was introduced from above, which, according to most writers, is the safer way to avoid these injuries to the bladder. Henkel⁴ explains the various advantages of this route in avoiding the bladder and the large venous plexus which lies close to the pubic bone. He does not believe that the direction from below upward really can, as is claimed, prevent injury to the crus clitoridis. The advice of some writers to always wait for the spontaneous expulsion of the fetus, cannot be accepted. A pubiotomy, in most instances, can be considered entirely successful only if the fetal life is saved by the operation. The condition of the fetus, therefore, first of all will decide whether an expectant treatment is justified or immediate delivery preferable. For the majority of cases the latter procedure will be necessary. Henkel mentions a case of placenta previa centralis, complicated by a contracted pelvis, in which the saving of both mother and child undoubtedly must be ascribed to the pubiotomy. In another paper the same author⁵ describes the mode of procedure in the Ols-hausen clinic in Berlin. If, in a certain case, pubiotomy is contemplated, the progress of labor is carefully watched. The operation is performed when the cervix is fully dilated, and, if possible, before the membranes are ruptured. If there are no indications either on the part of mother or fetus for a forced delivery it is permissible to wait, but never so long until a hurried interference becomes necessary. Frank⁶ and Seeligmann⁷ think that immediate delivery would seem preferable in the majority of cases, because such practice eliminates the disadvantage and danger of a second general anesthesia, following closely the one nearly always necessary for the pubiotomy. Reeb⁸ refuses to accept the dictum of Duehrssen that version should be the delivery of choice. Forceps certainly is less dangerous to the fetus. I think that a still stronger argument against a routine of version must be found in the fact that a pubiotomy can be successfully performed even in infected patients. Indeed therein lies one of the most striking advantages of pubiotomy over symphysiotomy and conservative Cesarean section for relative indications. The introduction of the hand into the uterus for the purpose of a version certainly would seem contraindicated in all cases in which an infec-

tion even can be only suspected, that is, in the majority of cases which in general practice come into the hands of the specialist. Doederlein's procedure is the ideal one in the opinion of Zangemeister.⁹ The Gigli saw is led around the pubic bone. Next, version is performed, and if then, in the course of extraction, difficulty is experienced in pulling the head down into the pelvis, the operator, or one of the assistants, quickly saws through the bone. A few other questions still *sub judice* are considered by this writer. He thinks that it is better to introduce the guide needle from below upward. In this way the horizontal incision above the pubic bone is avoided and the operation rendered completely subcutaneous. Stoeckel¹⁰ described a new guide needle resembling a large aneurysm needle. This instrument is highly praised by Bumm¹¹ who, in this article, declares that he would not hesitate to make a pubiotomy in a private house. Seeligmann¹² defends, against Bumm, his guide needle, which certainly looks like a very practical instrument. It is a properly curved hollow probe, which enables one to use the saw simultaneously with the guide needle. Another guide needle has been designed by Frank⁶ constructed like a Cleveland ligature carrier. Another point pertaining to the technique of the operation is considered by Rissmann.¹³ He believes in the drainage of the prevesicular space in every case of pubiotomy and uses for this purpose a silver tube. A special advantage gained by this procedure, in his opinion, is a resulting permanent enlargement of the pelvis. This point of permanent enlargement is discussed by several writers. Reifferscheid¹⁴ thinks that this occurs, at least in an obstetric meaning, if the union between the cut ends remains fibrous in character, that is, if the callus does not ossify. This can be obtained by avoiding a too tight bandage around the pelvis and by permitting the patient to leave the bed on the fourteenth to sixteenth day. The lack of ossification does not interfere with locomotion. A paper of Kannegiesser¹⁵ brings an exhaustive consideration of the whole literature on pubiotomy, with a report of twenty-one operations performed in Leopold's clinic in Dresden. Very instructive are the writer's observations concerning the final consolidation of the severed pelvic girdle. He succeeded in obtaining Roentgen pictures of many of the patients a long time after the operation. He cannot agree with Bauereisen's claim¹⁶ that the callus always remains fibrous. In many of the pictures taken by Kannegiesser a dark shadow between the cut ends of the pubic bone proved the presence of an ossified callus. He considers the operation indicated when, in the presence of a vera between seven and eight and a half centimeters, the disproportion between conjugate and fetal head is evident. The time for action has arrived when the os is fully dilated. Extraction should be performed at once while the patient is under the influence of the anesthetic. Excellent x-ray pictures are also presented in the paper of Hocheisen⁷ already mentioned. They show a light shadow between the cut ends up to

three weeks. In pictures taken later the shadow is darker, and about three months after the operation the picture would seem to indicate the firm osseous consolidation of the bone. Truzzi¹⁷ suggests to obtain the permanent enlargement of the pelvis by placing a plate of decalcified bone between the cut ends. A complicated operation for this purpose, a pelvio-plastic for narrow pelvis, has been invented by Credé.¹⁸ He proposes to divide the pubic bone in the typical manner and then to add another cut through the horizontal ramus of the bone, parallel to the pubiotomy cut and about two cm. farther outward. The lower end of this second cut lies within the foramen ovale. A third cut made with the saw, running horizontally from the lower end of the second cut into the middle of the pubiotomy cut, divides into two halves the section of bone lying between the two parallel incisions. The upper half, being of quadrangular shape, is then turned into the gap formed by the separation of the cut ends of the first typical pubiotomy incision. If necessary this same operation, in cases of extreme contraction, could also be performed on the other side. Grave objections are raised by Klien¹⁹ against the suggestion of Credé. Credé—the surgeon—of course is not familiar with the obstetric literature and, therefore, does not know that the idea of this operation is an old one. Frank, Phenomenoff and Kotschekoff have described such pelvio-plastic operations. These operations are superfluous in pelvis, which are only slightly contracted. They would prove useless in greatly contracted pelvis, and would undoubtedly impair the stability of the pelvis to a most dangerous degree, if performed on both sides, as is advised by Credé. Last year I have mentioned briefly two papers of Sellheim and Rosenfeld read before the meeting of the German Gynecological Society. These papers have now appeared in print. Rosenfeld²⁰ observed that in flat pelvis pubiotomy increases the transverse diameters equally in both halves of the pelvis, while in equally or only transversely contracted pelvis the increase is comparatively larger on the side of incision. He concludes that the pubiotomy should be made on the side on which the occiput of the fetus lies, or will lie, in case version is contemplated. Sellheim^{21 22} differs slightly from Rosenfeld, in that he found the enlargement equal in both halves in all instances. Sellheim's investigations were directed towards establishing the respective advantages of pubiotomy and symphysiotomy. With an equal separation of the cut ends of the bone the same degree of pelvic enlargement is obtained with both operations, but in order to obtain the same amount of separation three times as much force is required in the pubiotomized pelvis. The change in the shape of the pelvis resulting from these operations is identical in both, always transforming the pelvis into one of the funnel shaped type. Sellheim thinks that at present it is as yet impossible to state positively whether subcutaneous pubiotomy is an operation superior to symphysiotomy, a view in which he is shared by a few

other writers, e. g., Frank.⁶ Bué,²³ in comparing these two operations, is inclined to give preference to pubiotomy, although he had performed once a symphysiotomy with the Gigli saw and had succeeded in finishing the operation just as quick as a pubiotomy. According to Stoeckel¹⁰ the superiority of subcutaneous pubiotomy after Doederlein is evident. A great advantage lies in the fact that this operation, under favorable conditions, can be performed in the house of the patient. But in Stoeckel's opinion the enlargement obtained with symphysiotomy is greater and, therefore, this operation still seems preferable in the cases of extreme contraction. Reifferscheid²⁴ objects to this view of Stoeckel. According to his investigations the cut ends in pubiotomy, exactly like in symphysiotomy, easily separate from five to six cm., and, therefore, pubiotomy is permissible and indicated in cases with a true conjugate down to seven cm. and, in certain instances, even of 6.75 and 6.5 cm. On the other hand, Kroemer²⁵ repudiates the claim of Sellheim that in order to obtain equal separation of the cut ends a force three times as large is necessary in pubiotomy. This certainly is not true for all cases. Very often the bones readily yield to the pressure of the advancing head, and especially in cases of forceps extraction, due care must be taken not to rupture the sacro-iliac joints. This question concerning the relative advantages of pubiotomy and symphysiotomy entered a new stage, when Zweifel²⁶ described his new subcutaneous symphysiotomy. The one chief advantage of symphysiotomy is the lessened danger of a hemorrhage, while the main advantage of pubiotomy lies in the fact that it can be performed subcutaneously. These two advantages Zweifel tried to combine. Attempts of Stoeckel in this direction had failed, because the Gigli saw, led around the symphysis, always had the tendency to glide off to one side. Zweifel obviated this difficulty by first cutting a small groove into the posterior surface of the symphysis by means of a Pott's herniotomy knife. In two cases this new operation proved entirely satisfactory.

Most pessimistic views concerning the future of pubiotomy are expressed by Everke.²⁷ He thinks that the operation will be soon forgotten and thus share the fate of symphysiotomy. This view seems unjustified. Fehling,²⁸ in comparing the results of pubiotomy and artificial premature labor, is willing to admit that the mortality of the first operation probably is somewhat larger than that of the latter operation, but pubiotomy undoubtedly saves more children, and, therefore, must be preferred, in certain instances. But pubiotomy as yet can not supplant premature labor. Whether to deliver at once or to wait, is a question which must be decided upon the conditions presenting themselves in the individual case. Reifferscheid,²⁹ in reviewing the 22 pubiotomies performed in the University Clinic of Bonn, states that, out of a total of 202 cases recorded in literature, the mothers died in 12 instances. One fatal case is recorded by him. The patient died suddenly on the fifth day after

the operation from an embolus in the lung. Of course, it is not certain that the embolism stands in any connection with the operation, but Reifferscheid is willing to accept this theory for his case, because the bladder had been injured and a thrombus had formed around the pubic bone. There is another case of bladder injury mentioned in this series, in which spontaneous cure occurred without any operative interference. A case of fatal hemorrhage is mentioned by Rosthorn,³⁰ while Herz³¹ describes a perfectly successful operation, performed under most difficult circumstances, in the little cottage of a peasant.

A very exhaustive and thorough study of the literature is presented in a paper of Montgomery,³² read before the obstetric section of the International Medical Congress, held in Lisbon. A successful pubiotomy has been performed by the author in 1903. The results of 134 cases collected by him from the literature were uniformly favorable, there being no deaths in cases not infected previous to the operation, and all patients recovering with a perfect union of the bone and perfect gait. The only other extensive paper on the subject which I have so far found in American literature is written by Bill.³³ It contains a very clear description of the various steps of the operation. Two successful cases have been reported this year by two American gynecologists, namely, by Schmidt³⁴ and by Jewett.³⁵ In the discussion following Jewett's paper, Marx mentions two less satisfactory personal experiences with the operation.

FORCED DELIVERY.—During the past year a number of papers have appeared which thoroughly discuss the various methods of artificial dilatation of the pregnant uterus. The question whether the branched metal dilators or cervical incisions are preferable is still far from being definitely settled. The war between Bossi and Duehrssen is still waging, and the latter's visit to the United States has given many American physicians an opportunity to observe personally how vigorously Duehrssen fights for the priority of his operations, and how vehemently he attacks those who disagree with him.

The whole problem of forced delivery, with interesting historical sketches of the development of the various methods, is clearly set forth by Lewis and Holmes.³⁶ Lewis takes up the bloodless (*a not very appropriate term*) methods, viz., manual dilatation, colpeurynter and the metallic dilator, while Holmes considers cervical incisions and vaginal Cesarian section. These papers state, in an unbiased manner, the various advantages and disadvantages of these procedures, their indications and technique, and close with a carefully compiled bibliography. In an article dealing with the indications of premature labor and accouchement forcé, J. Whitridge Williams³⁷ has the following to say concerning the usual methods of forced dilatation of the pregnant uterus: Harris's method of manual dilatation is difficult and dangerous in all cases in which the cervix is intact, except in cases in which the cervix is unusually soft. Often it is

possible to dilate enough to admit two fingers with Goodell's or Hegar's instruments, after which further dilatation can be obtained by the Harris method. In all cases in which this mode of procedure is not possible, vaginal Cesarean section seems more conservative. Manual dilatation is comparatively safe and easy if the cervical canal is obliterated and the external os offers the only resistance. The colpeurynter is quite satisfactory where haste is not essential. Williams has never employed the Bossi dilator, nor have the statements of its most enthusiastic advocates ever tempted him to do so. Basing his deductions upon the results obtained in Winter's clinic in Königsberg, Hammerschlag³⁹ compares the following methods of artificial dilation of the pregnant uterus: Forced extraction on the leg after version has been performed, metreurysis, dilation with Bossi's instrument, cervical incisions and the typical vaginal Cesarean section. Deep lacerations of the cervix and infections represent the chief dangers of all methods. While the Bossi dilator caused the largest number of tears, it excelled in having caused the smallest number of infections. For use in the clinic all the methods are valuable, if properly selected, according to certain indications. For general practice only the first two methods are really practicable. Bossi's instrument can be used in the home of the patient, but it should be handled only by a specialist; vaginal Cesarean section should be performed only in a hospital. A symposium on mechanical dilatation versus incision of the cervix of the pregnant uterus was held at the last meeting of the American Gynecological Society in Hot Springs.⁴⁰ After a general consideration of the indications of the various procedures by Harrison, Harris dwelt upon the advantages of his method of manual dilation. But of late he also makes use of a mechanical dilator of the Bossi type. He has fitted the instrument with a dynamometer, which registers, in pounds, the amount of strain exerted upon the cervical ring. Edgar is in favor of a bimanual dilation. Grandin believes that cervical incisions should not be resorted to, if the complications calling for intervention justify delay. In his opinion such devices as the Bossi dilator should meet with the unqualified condemnation of American obstetricians. They are needless where the educated hand exists, they are dangerous under any condition. In the event of incisions being indicated the typical vaginal Cesarean section is preferable to simple cervical incision, but the indications for either one of these operations are extremely limited. Duehrssen, at this occasion, read a paper, presenting in detail the indications, the technique and the various advantages of his vaginal Cesarean section. Another article of Duehrssen⁴⁰ contains a vigorous protest against certain views expressed by Knapp concerning the opinion of German gynecologists in regard to Bossi's method. "I, together with other gynecologists," Duehrssen writes, "received the impression (at the meeting of the German Gynecological Society in 1905) that Bossi's method received its long-

deserved, honorable entombment, while *vaginal Cesarian section received indisputable recognition as the universal method.*" The rest of this paper is taken up with a rather uninteresting personal polemic against Knapp and a few other opponents and the lengthy enumeration of his arguments, why he should be considered the inventor of the cervical incisions. The article closes with the following advice, printed in italics and apparently addressed to all American obstetricians: *I warn you against the use of the instrument recommended by Knapp.* What Duehrssen himself thinks of the operation invented by him is best expressed in still another paper,⁴¹ when he says: Vaginal Cesarian section is the safest method for the emptying of the pregnant uterus. Deep cervical incisions, in the hands of a physician who is at all able to handle the knife, are child's play. In an answer to Duehrssen's attack, Knapp⁴² shows that cervical incisions have been practised as early as 1790. Duehrssen has no right to claim priority for these incisions which are decidedly dangerous and should never be performed. Bossi,⁴³ in quoting two new cases, defends his method against Duehrssen, whose views he regards "as a dangerous error which stands in conflict with the first principles of modern surgery." Duehrssen,⁴⁴ in a prompt response, thinks that Bossi is fighting windmills, since he himself certainly would not have performed vaginal Cesarian section in the two cases quoted by Bossi; in fact, he cannot see that there was any justification for any form of forced delivery in either one of these two particular cases. The tendency of Bossi's answer⁴⁵ to this attack is well expressed in the title of the paper: "The deep incisions as method of forced delivery and vaginal Cesarian section must be eliminated from the practice of obstetrics." Bossi feels that this should be done in the interest of many mothers and in compliance with the tendency of modern surgery, which opposes the destruction and mutilation and favors the preservation of organs. Hofmeier of Wuerzburg also warns⁴⁶ against the criticless employment of the so-called vaginal Cesarian section, which more appropriately should be called colpo-hysterotomy, and has been practised long before Duehrssen. He does not believe that this "surgical era of obstetrics" really marks an advance of obstetrics, with the possible exception of the modern treatment of eclampsia. In justice to Duehrssen, it must be mentioned that, in a discussion following the reading of two papers by Newell and Edgar,⁴⁷ in the obstetric section, at the meeting of the American Medical Association, Rosthorn of Heidelberg stated that, in general, German obstetricians give preference to vaginal Cesarian section as the procedure more surgical than mechanical dilatation. Jolly⁴⁸ employed the Bossi instrument with perfect success in four cases of premature detachment of the placenta, all four mothers and three of the feti having been saved. The great advantages of the rubber bag are clearly and convincingly set forth in a paper of 70 pages by Buerger.⁴⁹ The col-

peurynter—or, as this apparatus in this connection more properly is called, the hystreurynter—is used in Schauta's clinic extensively. It is certainly the ideal appliance to imitate, supplant or support the dilating function of the fetal membranes.

ABDOMINAL CESARIAN SECTION. Three larger contributions to this subject bring very little new concerning the indications or the technique of the operation; they are, however, of interest, because they summarize the results of an unusually large number of cases handled in one clinic or by a single operator. If nothing else, these statistics prove that the advocates of Cesarian section, in the treatment of placenta previa, have no right to claim that the mortality of this operation is nil or almost nil.

Neumann⁵⁰ presents a very exhaustive and interesting report of 180 Cesarian sections, performed in Schauta's clinic in Vienna. The results, as a whole, are extremely satisfying. This essay of 175 pages probably forms the most thorough discussion extant of the indications and technique of this operation. Olshausen,⁵¹ in a short article, gives an exceedingly clear resume of the present status of Cesarian section. The report is based upon the experience gained with 118 sections performed in the writer's clinic in Berlin. He considers Cesarian section justifiable in eclampsia, whenever very severe convulsions occur very early in labor, or before labor really has begun; of course, in these cases, vaginal Cesarian section has to be given preference. In discussing the various indications the writer mentions the fact that in the United States this operation has also been recommended in the treatment of placenta previa. "In Europe," he states, "nobody seems to have accepted this indication, which, even in America, seems to have more adversaries than supporters. Before long this indication will have disappeared, or—more correctly expressed—will have been forgotten as a blunder." No method of suture, no particular suture material, in Olshausen's opinion, will safely eliminate the danger of a uterine rupture in the scar during a subsequent pregnancy. A clinical study of 48 sections is presented by Davis.⁵² Four of the patients died, of whom three were infected at the time of the operation. A very clear and well-illustrated description of Davis' technique is appended. Boyd⁵³ reports a series of 14 successful cases. Quite accidentally I came across the account of a most unusual Cesarian section, performed under most unfavorable conditions in country practice. This operation was done by a Dr. Reynolds of Vashti, Va.,⁵⁴ on a negro girl, 13 years old, in February, in a small log cabin, with one door and a hole in the end of the house, without glass, for a window. A little coal-oil lamp, without a chimney, furnished the light. I quote from this article: "The uterus (after removal of fetus and placenta through an incision reaching from the fundus to near the cervix) contracted rapidly, so we had some difficulty in putting in stitches. I then put *one* (!) stitch in the middle of the uterine incision." The only instruments used in the operation

were a sharp-pointed bistoury, one needle and some silk and wire sutures. The patient made a perfect recovery.

TOXEMIA. ECLAMPSIA. It is with intention that the literature of these two subjects is not reviewed in two separate paragraphs. Although a few writers, as will be seen in the following, still adhere to the older conception, the view undoubtedly is fast gaining in favor that eclampsia is only a special form of toxemia, but not a disease of separate entity. In my opinion⁶⁵ the day is not far distant when morning nausea, pernicious vomiting, the increased reflex irritability during pregnancy and eclamptic convulsions, all the minor disturbances and the serious complications incident to pregnancy, will be explained as due to a toxemia, which is more or less peculiar to pregnancy and is brought about by a disturbance in the equilibrium between the production, i. e., resorption and elimination or destruction of certain toxic substances in the maternal organism. On account of the various sources from which they originate these toxins undoubtedly are of different chemic constitution and character, and the prevalence of the one or the other, in my opinion, accounts for the variation in the clinical picture under which a pathologic degree of toxemia manifests itself in the pregnant woman.

Zweifel⁶⁶ thinks that sarco-lactic or paralactic acid is the toxic substance responsible for eclamptic convulsions. In examining the urine of eclamptic patients he ascertained two interesting facts. He found that the amount of urea in proportion to the total amount of nitrogenous substances was diminished, while the ammonium compounds on the other hand were largely increased. This he explains as the result of a deficient oxidation of the albumen in the body. This insufficient supply of oxygen to the red blood cells, in Zweifel's opinion, also accounts for his other interesting finding, namely the presence of lactic acid in the urine of 17 consecutive cases of eclampsia. He concludes, from his observations, that lactic acid must be intimately connected with the causation of eclampsia. This theory is further developed in another article⁶⁷ in which he records the observation, that an extract from the placenta contains more sarco-lactic acid than the maternal blood, and that the amount of this acid in the fetal blood, collected from the umbilical cord, in comparison to that of the maternal blood rises to the proportion of three to one. The conclusion is then drawn that the fetus is the source, i. e., insufficient oxygenation in the fetus is the cause of eclampsia. Prompt emptying of the uterus, therefore, alone can be regarded the logical mode of treatment. In two articles, devoted to a most interesting consideration of pernicious vomiting J. Whitridge Williams^{68 69} shows why we have to differentiate between a reflex, a neurotic and a toxemic form of pernicious vomiting, and why eclampsia is an essentially different form of toxemia. He considers the neurotic form the most frequent variety of hyperemesis, which can be cured by suggestion or a modified rest cure. It may be mentioned in this

connection that Williams is not in favor of the view recently advanced by many writers that the underlying cause of this neurosis may be a mild toxemia. In toxemic cases of pernicious vomiting—in contradistinction to those of the reflex or neurotic variety—the urine shows a marked decrease in the amount of nitrogen excreted as urea, and a characteristic increase in the amount of nitrogen excreted as ammonia. If, according to Williams, the percentage of ammonia rises above ten per cent of the total amount of the nitrogen output, the patient's condition must be considered critical and the artificial interruption of pregnancy is indicated. The justification for his refusal to accept the recent theories concerning the unity of eclampsia and other toxemias of pregnancy Williams finds in his observation that in the pre-eclamptic state, on the other hand, the ammonia coefficient is normal, or if raised, usually is of a favorable prognostic significance. Various objections have been made against these views of Williams. Wolf⁶⁰ considers them unwarranted because this peculiar relative increase of the ammonia excretion is typically observed in all forms of starvation, being most pronounced in persons who are more or less devoid of body fats. They have to live on their proteins during the period of inanition. Zweifel's theory of the acid intoxication apparently has found valuable support in the results of investigations carried on by Fueth and Lockmann⁶¹. They claimed to have been able to prove the presence of small quantities of sarco-lactic acid in cerebro-spinal fluid withdrawn during eclamptic seizures. Wolf refuses to accept the findings of Zweifel, Fueth, etc., as conclusive, especially because such minimal quantities of lactic acid are found in the urine under many other conditions. In his opinion it is futile to try to explain the etiology of pernicious vomiting through the medium of an acid intoxication. "Any attempt to recognize or to diagnosticate degrees of this disorder through an examination of the urine for ammonia, for aceton, aceto-acetic acid or oxy-butyric acid is lacking the support of any thoroughly sound physiologic experimental groundwork." Edgar⁶² accepts the theory of the unity of all toxemic conditions. In his opinion the belief is slowly but surely gaining ground, that a special autotoxic state of pregnancy does exist. This toxic condition of the blood of pregnant women is due to faulty metabolism and *possibly* arises from hepatic insufficiency. It shows itself most commonly by trivial ailments which we see in many gravid women, but exceptionally by serious, severe and even fatal affections, such as acute atrophy of the liver, pernicious vomiting and eclampsia, conditions which today are believed to be closely related. The writer points to the fact that for obvious reasons it has been assumed that errors in metabolism must lead to changes in the chemical constitution of the urine in so far as the latter would contain unoxidized compounds to replace the total nitrogen. But basing his belief upon the investigations of Wolf, mentioned above, he does not feel ready to accept the claim of Williams

that a rise in the percentage of ammonia above ten, signals danger and would justify operative interference. So far, chemical urinalysis can not guide the practitioner in the diagnosis and prognosis of pregnancy toxemia. Almost identical views are expressed by Straus⁶⁵ in an excellent paper which considers the whole problem of toxemia in a most thorough manner. Straus also seems inclined to believe that the diverse clinical types of pregnancy toxemia, including eclampsia, are expressions of one and the same exciting cause. Audebert⁶⁴ observed as the result of a hepatic toxemia of pregnancy in several patients that complexity of symptoms which usually is regarded as characteristic of exophthalmic goitre and suggests a possible etiologic connection between these two conditions. According to Dupouy⁶⁵ in women with a hereditary taint an autointoxication of pregnancy often becomes responsible for the development of a true psychosis.

Liepmann in several contributions advances further proof for his theory of the placental origin of the toxins of eclampsia. He describes⁶⁶ his results with injections of an emulsion of dried placentas of eclamptic patients into rabbits. Characteristic pathologic phenomena occurred, and in many instances convulsions ensued. Liepmann endeavors to prove that the toxin is within the placenta fixed in the protoplasm of the cells. Attempts to extract this toxin so far have failed, nevertheless the author hopes that some future day will bring the specific serum for the treatment of eclampsia. The one objection of importance, which has been made against the theory of the placental origin of the eclampsia toxin, is that it does not explain the cases in which eclamptic convulsions appear subsequent to the expulsion of the fetus and its membranes. In another article⁶⁷ Liepmann tries to prove that this objection is untenable. His investigations show that the liver is capable of retaining a large amount of such toxins and later may not be able to neutralize them. In this case they enter the maternal system and lead to convulsions even after the expulsion of the fetus. Still another proof for the placental origin of these toxins, in Liepmann's opinion, is found in the occasional observation of eclampsia in the presence of a completely macerated fetus, which undoubtedly has been dead for some time. He describes a case of this kind⁶⁸ and mentions the noteworthy fact that Duehrssen once has collected the records of 200 cases of this sort. Weichardt and Piltz⁶⁹, continuing investigations first begun by Weichardt, Liepmann, Bergell and others, found that the toxins are formed as the result of a cytolytic process caused by the transition of placental tissue into the maternal system. These toxins produce eclampsia if the maternal blood does not contain the necessary amount of anti-endotoxic substances to inhibit their action. These new investigations represent an advance in our knowledge of these processes. They show that it is not an actual anti-toxin, as usually assumed, which neutralizes these cytolytic toxins.

The theory of Nicholson that an insufficient function of the thyroid gland stands in close relation to the causation of eclampsia has found many advocates. More recent investigations, however, tend to show that possibly it is not the thyroid gland itself, but the so-called parathyroid glands whose function may be at fault in cases of eclampsia. These parathyroid glands (or bodies) have first been described by Sanderstroem in 1880. There are usually four of them, two on each side of the thyroid gland. Microscopically they are easily distinguishable from thyroid tissue. The importance of the parathyroid bodies as organs with an internal secretion today is positively established. The observations of Gley made to this effect in 1893 have been confirmed by many investigators. Giulio Vassale first furnished valuable practical support for this theory by his striking results obtained in the treatment of tetany and eclampsia with an internal administration of an extract made from parathyroid tissue. Quite recently Vassale⁷⁰ has reported most satisfactory results obtained by him and others in investigations concerning the parathyroid theory of eclampsia. Pathologic changes and the congenital absence of these bodies have been ascertained in women who died during an eclamptic attack. Further good results in the treatment of eclampsia with the extract of parathyroid tissue have been recorded. Zangrognini, Erdheim and others have demonstrated by experiments on animals that during the last third of pregnancy an insufficient action of the parathyroid bodies may lead to severe convulsions (experimental eclampsia). In new experiments, made by Vassale himself, it has been found that the extirpation of these bodies causes an albuminuria during the last few days of pregnancy, which disappears like the albuminuria of eclampsia promptly after labor. The work of Vassale has led Frommer to experiment along similar lines. He⁷¹ concludes that parathyroid tissue secretes a substance of an antitoxic character which protects the animal against the development of a tetany. Total parathyroidectomy performed on rabbits often causes their death, and if combined with thyroidectomy often results in a fatal tetany. But he was unable to confirm Vassale's theory of an etiologic connection between the function of these bodies and eclampsia.

Vaquez⁷² calls attention to his interesting observation that an increase in the blood pressure to 19-27 cm. (against 13-14 normal, measured with the apparatus of Potain) is one of the most reliable prodromal symptoms of eclampsia. A persistence of the high pressure is always of bad prognostic significance, even if other symptoms seem to improve. The idea that an increased tension of the cerebro-spinal fluid in some way accounts for the convulsions, during the last few years has led various investigators to suggest a spinal puncture as a therapeutic measure. In summarizing all the reports so far extant on this new mode of treatment of eclampsia, Thies⁷³ comes to the conclusion that only in very few

instances an apparently favorable effect has been observed. It seems that the withdrawal of the spinal fluid shortens the comatose state but, on the other hand, it does not seem to reduce the number of subsequent convulsions. These empiric conclusions, in Pollak's opinion⁷⁴, harmonize entirely with the results of his own histologic examinations of the central nervous system of patients who died during eclamptic convulsions. He found marked changes in the spinal cord and in the nuclei of the motoric cranial nerves, especially of those controlling respiration.

The interesting problem of renal decapsulation in cases of eclampsia, an operation first performed by Edebohls of New York, is thoroughly discussed in a thesis written by Chambrelent and Pousson⁷⁵. It is the purpose of this operation to diminish the intrarenal tension. In order to obtain this result in a still more effective manner these writers suggest to add to the decapsulation, whenever necessary, a deep incision into the substance of the kidney. As far as the toxemic condition is concerned an additional beneficial effect must be expected from the loss of blood incident to this incision. They record the case of a primipara in whom eclamptic convulsions continued after delivery in spite of vigorous medicinal treatment. Patient lapsed into a deep coma. The decapsulation of both kidneys with a nephrotomy on one side led to prompt relief of the anuria. The coma disappeared on the third day and patient recovered. In a small piece of tissue removed from the incised kidney the typical signs of an acute parenchymatous nephritis were found. Pinard, who acted as the reporter of this thesis before the academy, added that he has performed this operation in three patients, all of whom recovered, but he believes that the operation should be reserved for cases with a complete anuria. A third case of successful decapsulation in a case of eclampsia has been reported by Edebohls.⁷⁶ At this occasion he once more has emphasized the observation made in his second case, that decapsulation may stop the convulsions without the uterus being emptied. In cases of eclampsia occurring early in pregnancy, this operation, therefore, may have the additional advantage of saving the life of the mother without sacrificing that of the fetus. This particular point is objected to by Sippel⁷⁷, who, long before Edebohls, had suggested renal decapsulation for the relief of the anuria during an eclamptic attack. In his opinion the same stasis with the resulting suppression of urine is likely to return with the further progress of pregnancy. He thinks that this operation should be performed only after the uterus is empty. The few successful operations so far recorded permit the conclusion that the convulsions subsequent to labor are not necessarily due to retained toxins, as explained by Liepmann, but may be caused by pathologic intrarenal tension.

A new suggestion for the symptomatic treatment of eclampsia has been made by Laurendeau⁷⁸, who administers hypodermically scopolamine hy-

drobromate in doses of one-fiftieth of a grain, with one-fifth of a grain of morphia and fifteen drops of fluid extract of veratrum viride. After an hour and a half, if the attacks continue, this dose is repeated. A third injection can be given another hour and a half later, containing the same doses, less five drops of the veratrum.

Finally I wish to mention two papers containing therapeutic advice quite out of harmony with the mode of treatment as commonly practiced by European and American obstetricians.

Roger de la Harpe⁷⁹ describes the routine treatment of eclampsia in the famous Rotunda Hospital of Dublin. Its chief feature is the administration of morphia in heroic doses. One-half grain doses are given hypodermically to a maximum total of two grains within twenty-four hours. The elimination of toxic material is propagated by washing out of the stomach but curiously enough not one word is said in this article concerning hypodermoclysis. "Induction of labor is never performed, nor is labor counted on in this treatment. The only intervention permissible locally (and this only in very exceptional cases) is the application of the forceps, when the head is on the vulva." The fact that the maternal mortality from eclampsia in the Rotunda Hospital is only 16.9 per cent (!) proves to the writer conclusively that this is the best method of treating eclampsia. I feel sure that no American obstetrician will feel inclined to raise his mortality to 17 per cent by adopting this treatment. Two French investigators, Macé and Pierra,⁸⁰ warn against the use of saline solution. Studying the freezing point and the amount of chlorines in the urines of four classes of women, viz., non-pregnant, normally pregnant, pregnant with albuminuria and those suffering from eclamptic convulsions, they apparently established the fact that the prognosis of eclampsia is more unfavorable if the quantity of the urine is diminished, if its molecular concentration is high and if the amount of chlorines excreted is inferior to that resorbed. But these exactly are the conditions they obtained by the use of saline injections. The final conclusion of their investigations is that the saline solution in the treatment of eclampsia must be replaced by a plain water diet, since even milk is harmful in that it contains a considerable amount of chlorines.

In discussing insidious affections of the kidneys in the young, Gillmore⁸¹ mentions the interesting observation of Castaigne and Rathery, that the transition of certain nephrotoxic substances to the fetus *in utero* may account for nephritic conditions in a child born by a mother who suffered from a nephritis during pregnancy. It is obvious that such a "hereditary" transmission of a nephritis is more likely to occur in cases of eclampsia.

PLACENTAL SYPHILIS.—The spirocheta pallida has been repeatedly found in the placenta in cases of maternal syphilis. While it has been claimed by Menetrier and Rubens-Duval, Natten-Larier and Brindeau⁸²

and others that the organism can be detected only in the fetal portion of the placenta, in the infiltrated and necrotic connective tissue of chorionic villi and in the tunica media of vessels, Wallich and Lecaditi⁸³ have succeeded in demonstrating the spirocheta also in decidua. Their case is of special interest because neither father nor mother exhibited any signs of syphilis, the infection being only suspected from a peculiar pemphigus-like eruption of the new-born. From similar observations Borrel and Burnet⁸² consider the examination of the placenta for spirochetæ a valuable means of ascertaining a syphilitic infection in doubtful cases.

The presence of a specific syphilitic toxin in the placenta of syphilitic mothers can be proved by a new serum diagnosis which has been worked out by Wassermann, Neisser and Bruecke.⁸⁴ Their method is a modification of the serum diagnosis of Gengon for typhoid, meningitis and tuberculosis.

Zangemeister⁸⁵ confirms the claim of Versé and Schlimpert that the spirocheta pallida can be found in almost all organs of the macerated fetus of a syphilitic mother. Of six feti examined by Zangemeister in five the result of the examination was positive. According to Beitzke⁸⁶ the spirocheta most easily is found in sections of the liver of a macerated fetus, and Huebschmann⁸⁶ detected them in large numbers even in the thyroidea.

PELVIMETRY.—The history of the short life of one of the newest methods of pelvimetry is worthy to be recorded. Bylitzki in 1904 invented a new method of instrumental mensuration of the pelvis by means of peculiarly shaped bars (Winkelhebel), which are pressed between symphysis and promontory. Gauss was the first to attest to the value of the instrument and to suggest some modification in the shape of these bars—such as bending the handle a little more downward. And every man who used the instrument had to suggest some improvement, e. g., Faust,⁸⁷ Gauss,⁸⁸ Zweifel,⁸⁹ until it became quite evident to Herff⁹⁰ and others, that the new method of pelvimetry of Bylitzki, in its fundamental principle, is very similar to, if not identical with the old method of Coutouly, which has been described, in 1810, and is still kept alive in Farabeuf's pelvimeter. The one great objection against instruments of the Coutouly type always has been the fact that they necessitate considerable stretching of the vaginal wall and often cause more or less dangerous injuries. This very same disadvantage is adherent to Bylitzki's method. Bylitzki⁹¹ now tries to protect himself against the well-meant efforts of all the improvers and modifiers of his "Winkelhebel," by claiming that he does not see any advantage in trying to simplify and popularize his original set of 13 measuring bars, so as to make it practicable for general use.

Jacobson⁹² describes a "new" pelvimeter for which he makes the claim, certainly not very modest, that it "will enable the physician to measure easily, rapidly, accurately, and painlessly all the important diameters. It

will also enable him to determine the shape of the pelvis and in the presence of abnormalities, such as callus, tumor or deformity, to find exactly how much room is available." Truly, this means the ideal solution of that vexed problem of pelvimetry! But one seems justified in doubting the author's right for his claim. His instrument shows a remarkable resemblance to that pelvimeter of Wellenbergh, first published in 1831, on which all the present methods of into-external pelvimetry are based. (See a picture of the original Wellenbergh instrument in Skutsch's monograph "Beckenmessung," Fig. 45, and its description on page 69.) A summary of all the objections which have been made against this instrument can be found in this monograph. They all hold true for Jacobson's instrument, and of necessity must be more or less applicable to all instruments based upon the principle of into-external pelvimetry. Results obtained with these instruments *a priori must be inaccurate*, because it is impossible to ascertain accurately where the continuation of any internal pelvic diameter will strike the skin, and the essential principle of this method lies entirely in the assumption that this is possible.

LOWER UTERINE SEGMENT.—It certainly is remarkable that as yet it has not been definitely settled, what the generally used term "lower uterine segment" actually means. Barbour and Webster, a few years ago, examined a section through the frozen body of a woman, who had died in the second stage of labor, and they apparently furnished conclusive proof that the lower uterine segment is a portion of the uterine body, because they found cervical glands only in the lower half of the stretched and thinned segment. Very different are the conclusions arrived at by Bumm and Blumreich,⁸⁸ who had occasion to examine a very similar specimen. They found typical cervical glands in the whole area of that stretched and thinned segment below the very distinct contraction ring, and are positive that the lower uterine segment is the distended cervix. The contraction ring, which more properly should be called retraction ring, indicates the line of demarcation between the retracting uterine muscles and the passively stretched cervix. Hartman,⁸⁹ from interesting observations made by him in a case of deep-seated placenta, concludes that the so-called lower uterine segment is a portion of the cervix, that the contraction ring is identical with the internal os and that the primary insertion of the fertilized ovum within the cervix is possible.

Of course, much is dependent just upon this last point. Those who contend that the lower uterine segment is cervix will have to admit the possibility of a participation of the cervix in the process of nidation of the impregnated ovum. Kermauner⁹⁰ asserts that in the three cases of Weiss, Ponfick and Ahlfeld the existence of a placenta previa cervicalis has been proved beyond any doubt, and that the possibility of such a condition is strongly suggested by numerous other observations recorded in literature. He describes a fourth case in which the partial

adherence of the placenta to the cervix is established by anatomic-histologic examination of the specimen. Aschoff⁹⁶ thinks that the problem of the lower uterine segment has not been settled satisfactorily so far, because there does not exist an acceptable definition of the term cervix. Its macroscopic meaning does not coincide with its microscopic meaning, and in consideration of historical reasons and of the common practice the term should be used only in its macroscopic, clinical meaning. Cervix is the neck portion of the uterus extending from the external to the so-called internal os, that is, the region where the narrowest portion of the cervical canal ends and the uterine cavity begins. But this line is not identical—as is often wrongly assumed—with the line of demarcation between the typical cervical mucosa and the endometrium. This line lies about ten to twelve millimeters lower. This *os internum histologicum* thus is different from the *os internum anatomicum*, and the portion of the cervix lying between them should receive a special name, *isthmus* seeming most appropriate. Such a division of the uterus into three portions, viz. body, isthmus and cervix proper, would, in Aschoff's belief, speedily settle the fight concerning the lower uterine segment, which simply is the dilated isthmus, the contraction ring being identical with the *os internum anatomicum*.

MYOMA.—The numerous contributions of the past year to this subject hardly indicate any very marked change in the views of the leading gynecologists as regards the operative treatment of uterine myoma. We still meet the extremists, but fewer of them, who believe in the extirpation of every fibroid immediately on diagnosis. The majority of the writers, however, agree that temporizing under certain conditions is well justifiable, and that no hard and fast rules can be laid down concerning the indications for operation. The possible dangers of a uterine fibroid, a tumor which but a few years ago was considered entirely harmless, to-day are well understood. To a large extent we owe this advance of our knowledge to the persistent efforts of Noble, who in a recent very instructive article, summarizes the results of careful observations made by himself and a number of other writers. The fact seems worthy of note that, during the last year, several authors expressed their doubt concerning the wisdom of leaving the ovaries in cases of hysterectomy, as has been first suggested by Werth, and has become the very generally accepted rule among American gynecologists.

At the 15th International Congress in Lisbon, in the section of obstetrics and gynecology,⁹⁷ two very notable papers on the therapy of uterine myoma were presented by Martin and Tuffier. Martin traces the evolution of the treatment of fibroids since the year 1881, and then gives a clear picture of the present status of the problem. The technique of vaginal operations has been brought to a high state of excellence, the indications for these operations, however, are definitely limited. Ad-

hesions, a soft, crumbling condition of the tumor, and extreme size form the strict contraindications. Narrowness of the vagina can not be considered a hindrance because Schuchardt's paravaginal incisions can be resorted to. The primary mortality of the vaginal operations is below five per cent. They are safer, the convalescence is shorter and freer of complications, conclusions which are almost identical with those arrived at by Henkel.⁹⁸ The two abdominal radical operations are supravaginal amputation and total extirpation of the uterus. The experience gained with the total extirpation in cases of uterine carcinoma has of late led to a more general acceptance of panhysterectomy also for the myomatous uterus. The primary mortality of these operations is about five per cent. The preservation of one or both ovaries, in Martin's belief, is of little practical value.

The conservative operation, enucleation, has made slow progress in Germany. Martin does not advise this operation in elderly women, or where there is co-existing a disease of the uterine appendages, or a suspicion of malignant disease, or where numerous nodules are present. That he is, however, in favor of conservative myomectomy can be concluded from the fact that within the last six years he has performed 147 enucleations and 134 radical operations. Martin thinks that uterine discharge and profuse menstruation subsequent to conservative operations can be avoided if his mode of procedure is adopted. He first cures the uterus. After enucleation of the tumor, he opens the tumor bed into the uterine cavity and inspects the endometrium. If it is found swollen, it is resected. Then the tumor bed is closed in layers. Martin claims that 97 per cent of his patients treated by enucleation are well.

The second paper of Tuffier and de Rouville considers the treatment of uterine myoma under three headings: (1) *Medical Treatment*. It is symptomatic, directed towards the relief of pain or the arrest of hemorrhage. The electrical treatment is described at length and considered of value in certain cases. (2) *Palliative Surgical Treatment*. The rapid progress of the curative operations has left but a limited field to the palliative operations, such as curettage, ligature of the uterine arteries and oophorectomy. (3) *Curative Treatment*. It comprises hysterectomy and enucleation. The latter operation is useful in carefully selected cases, and always must be considered preferable to the radical operations. In the opinion of these authors vaginal hysterectomy has very limited indications. Supravaginal amputation on principle should be given preference over total hysterectomy. The ovaries should be left if found in a healthy condition.

Somewhat different are the conclusions drawn by Sarwey⁹⁹ from the results of 430 operations for uterine myoma performed in the gynecologic department of the University of Tuebingen. Sarwey calculates the mortality of all the modern operations for fibroids as between four and five

per cent, and claims that the vaginal operations have a mortality one or two per cent larger than that of the abdominal operations, and that the mortality of the conservative operations is one per cent higher than that of the radical operations. It may be mentioned right here that Henkel,⁹⁸ in a recent article, has tried to prove that Sarwey made some errors in his calculations and that the very statistics quoted by him in fact show that the mortality of the vaginal operations is smaller than that of the abdominal operations, which seems more in accord with the views generally held. In Sarwey's opinion the best permanent results are obtained by means of a panhysterectomy which includes the extirpation of both ovaries. Sarwey approves the objections usually made against enucleation, namely, the possibility of a development of new tumors, the return of pain and hemorrhages, the chance of another operation and the possibility of a uterine rupture in the scar in case pregnancy should occur. Conservative operations should be limited to young patients who insist upon the preservation of their menstrual function and their faculty to bear children. According to Fehling¹⁰⁰ the enucleation of a single tumor through the vagina is the only form of conservative myomectomy which yields satisfactory results. The abdominal route is too dangerous for conservative operations, since the mortality of abdominal myomectomy is higher than that of abdominal hysterectomy.

Manton¹⁰¹ makes a strong plea for conservative myomectomy, an operation which, in the opinion of Noble,¹⁰² has a very limited field of usefulness. Myomectomy preserves the possibility of conception, but the probability of it is slight and in most cases the only advantage to the patient lies rather in the fact that she has left the hope to conceive. For all practical purposes, therefore, the question of pregnancy is of importance only in the comparatively small group of women who ardently desire children. Of 44 patients in whom submucous myomata had been removed through the vagina, only one became pregnant and carried to full term. Of 22 women, in whom abdominal myomectomies had been performed, two became pregnant, one miscarrying. In Noble's belief nothing is gained by leaving the ovaries in cases of hysterectomy, a view which e. g. also is expressed by Rochard.¹⁰³ Rather radical is the position taken by Reed¹⁰⁴ in a paper read at the meeting of the British Medical Association in Toronto. The only cases in which there may be any doubt whether operation should be performed or not are those in which the tumor does not cause hemorrhage or exert pressure or present evidence of either infection or malignancy, or that has ceased to grow, and in which some condition, not connected with the tumor itself, makes operative interference the more dangerous policy. But after all: "The only safe place for a fibroid of the uterus, however small or large, however soft or hard, however recent or old, is the outside of the patient's body." And just to show how unsettled the question of operation of myoma is,

I may be permitted to quote here a sentence taken from the article of Pellanda,¹¹² a French writer, who investigated the causes of death of 171 patients who died from complications resulting from uterine fibroids. It reads: "The surgeon is more dangerous than the tumor."

A suggestion of Dorsett¹⁰⁸ concerning an improved technique of supra-vaginal amputation is worthy of consideration. He unites the severed ends of both round ligaments and sews them to the posterior portion of the remaining cervix before the whole stump is covered with peritoneum. This fixation of the cervical stump in a good position will undoubtedly help to prevent a sacculation into the vagina of either bladder or rectum, one of the not uncommon after-effects of a subtotal hysterectomy.

Noble, in 1901, first suggested the study of the question of degenerative processes in uterine fibroids on consecutive series of cases, as handled by one man or in one clinic. His suggestion has been accepted and during the last few years, by twelve writers, such successive series of cases have been detailed. Including his own series of 337 cases, Noble was thus enabled, in a recent article,¹⁰⁰ to base most valuable and reliable conclusions concerning the real nature of fibroids, their complications degenerations and the dangers caused by them on a total of 2274 carefully observed cases of uterine fibroids.

Noble summarizes in a table the observations of the various authors: 1553 cases, i. e. 68 per cent, showed a complication of some kind, certainly a formidable figure, and there cannot be any doubt that this figure still is too small, since many of the cases recorded in this table date back to a time when it has not been the custom to record every complication. The total number of 2274 cases contains 43 cases of a complication with a carcinoma of the uterine body (1.8 per cent) and 16 cases of cervical cancer (0.7 per cent), a fact which, in Noble's opinion, proves that myo-fibroma favors the development of a corporeal cancer. Sarcoma was present in 34 cases, i. e. in 1.4 per cent, a figure in all probability too small, since Winter has shown that when all nodules contained in a myomatous uterus are examined microscopically, a sarcoma is found in about 4.3 per cent of the cases. Thrombosis, embolism and phlebitis are complications which are encountered more frequently in connection with fibroids than with any other known condition. Fibro-cysts occur in about 2.5 per cent of the cases. Besides these degenerative processes, there are a number of conditions, the secondary results of fibroids, which lead to fatal termination in a definite percentage of the cases without operation. Such conditions are: anemia, injurious pressure exerted by the tumors on the urinary organs, renal and cardiovascular complications. The old view that the menopause has a beneficial influence upon fibroids today should be replaced by the conviction that its influence is rather dangerous. Small tumors may disappear after a pregnancy, but this certainly is a rare occurrence. Partial obstruction of the bowels from

uterine fibroids is relatively common. Women who have fibroid tumors often are sterile. Olshausen has figured that among 1731 married women with uterine fibroids 520, i. e. 30 per cent, are sterile, but the true percentage probably is smaller, since, obviously, sterility brings a larger number of these patients to the gynecologists. In addition to the deaths which would ensue from the degenerations in the tumor and from co-existing complications in the uterus, out of the total number of 2274 cases in 252, certain complications were present outside of the uterus, mostly in tubes and ovaries, many of which would have proved fatal without operation. In this way Noble estimates a probable mortality of 11 per cent for the mixed series of cases, of 15 per cent for his own cases, alone from complications outside of the tumor and the uterus. In spite of these recognized dangers, Noble is willing to accept the tradition of the profession in reference to small tumors which do not cause any symptoms. He advises an expectant treatment for them, "with considerable doubt as to its justification." The present mortality of all radical operations averages 2.26 per cent. In comparing this figure with the prospective mortality without operation of from 15 to 20 per cent from degenerations and complications within the tumor and uterus, with the addition of another 11 per cent mortality from complications outside the uterus, or a total mortality of about 30 per cent, very little doubt seems left that the prompt removal of the growth is the safer policy.

Winter¹⁰⁷ has met with 12 cases in which a uterine fibroid was complicated with a corporeal cancer, but in only four of these cases the diagnosis had been made previous to operation. The possibility of a cancer developing in the cervical stump cannot be considered a just cause of pleading in favor of total hysterectomy. A sarcomatous degeneration is a more common complication. He found it in 3.6 per cent of his patients suffering from a myoma. It is interesting to note that out of his 27 cases of sarcoma only in one the diagnosis has been made before operation. But even this experience cannot induce him to plead for the extirpation of every myoma.

Uterine fibroids are very common, so is cancer of the uterus, and since the maximum of frequency in relation to age is very nearly the same in both growths, it cannot be a matter for surprise that they should frequently co-exist. This is the way in which Bland-Sutton¹⁰⁸ argues against the assumption of Piquand and others, that fibroids actually predispose the development of uterine carcinoma. It is to be deplored that the histories of the eight cases of this complication, observed by the author, do not indicate how often, if at all, the existence of the carcinoma was recognized before operation. Bland-Sutton only mentions the fact that when cancer of the uterine body arises in a patient who does not cease to menstruate at the normal age "it is extremely liable to be overlooked."

The statement of Winter and others, that the complicating carcinoma

or sarcoma so very rarely is diagnosticated or even suspected, I do not find properly appreciated by either those who write in favor of conservative myomectomy or those who vigorously object to this operation. In view of such facts it seems to me that one would be justified in doing an enucleation only after the histologic examination of a piece of cervix and of the scrapings of a thorough curettage have failed to reveal any signs of malignancy. But even this mode of procedure would not furnish absolute protection, especially in cases of a sarcomatous degeneration. I, therefore, believe that Cullen's suggestion should be generally accepted. He¹⁰⁹ advises strongly to examine the uterine mucosa and every myomatous nodule immediately after operation in order to exclude malignancy or to be enabled to speedily perform another radical operation if this examination discloses the presence of a never-suspected malignant degeneration.

A tuberculous infection of a uterine myoma undoubtedly is an occurrence of extreme rarity. An observation of this condition is described by Dickson.¹¹⁰ It is according to his statement the only case recorded in literature. But already a very similar case of a tuberculous infection of an adenomyoma has been described by Archambault and Pearce.¹¹¹

ROENTGEN RAYS.—A novel method of conservative treatment of uterine fibroids consists in the application of Roentgen rays. The following interesting history of the development of this new therapy is given by Goerl.¹¹² The observation of Albers-Schoenberg, published in 1903, that male rabbits can be sterilized by an exposure of their testicles to the x-rays, was soon confirmed by Seldin and Heinecke. The two latter investigators detected degenerative processes in the testicles as the cause of the sterility. Influenced by these reports Tilden-Brawn examined a number of men, who, while working in factories, had been exposed to the effect of these rays. It was ascertained that the 18 workingmen who were in the employment of this factory for more than three years, had a sperma free of normal spermatozooids. Halberstaedter¹¹³ next established the fact that the ovaries of animals are just as susceptible as the testicles to the harmful effects of x-rays. After a comparatively short exposure macroscopically and microscopically an atrophy of the follicles became evident. The question whether an identical effect is exerted upon the ovaries of women is not as yet definitely settled. Faveau de Courmelles was the first to use Roentgen rays in the treatment of patients suffering from uterine myomas. He reported improvement in 38 cases out of a total of 45 treated in this manner. While this French writer endeavored to obtain the desired effect by the direct action of the rays upon the tumors themselves, Goerl, on the other hand, attempted a practical application of the detection of Halberstaedter. He administered the x-rays to the ovaries in the idea of obtaining secondary changes in the fibroids by a primary atrophy of the ovaries. A patient treated in this manner showed a very encouraging improve-

ment of her condition. Goerl mentions the possibility of employing the x-rays in women in whom a complicating disease, permanently or only temporarily, makes impregnation undesirable. Specht,¹¹⁵ in repeating the experiments of Halberstaedter on rabbits, confirms that the changes brought about by Roentgenisation affect both the follicles and the interstitial parenchym of the ovaries. He emphasizes that the atrophy is not the result of any alteration of the capillary vessels, but is due to the direct influence of the rays on the cells themselves. Fellner and Neumann¹¹⁶ thought that these atrophic changes in the ovaries, if produced during pregnancy, should exert a distinct influence upon the further development of the fertilized ovum, if the contention of some writers is true, that certain functions of the ovaries during pregnancy control the growth and development of the ovum. They experimented on 15 pregnant rabbits and concluded that the Roentgenisation of the ovaries during the first half of pregnancy, even when the uterus was carefully protected against the rays, caused a retardation or cessation of the further development of the ovum. The ovaries in all instances showed a marked degeneration of both the follicles and the interstitial parenchym and in this manner, in the opinion of these investigators, their internal secretion is interfered with and secondarily the harmful effect upon the progress of pregnancy brought about. Experiments made by Lengfeller¹¹⁷ on pregnant guinea pigs near the end of pregnancy show that x-rays apparently have a deleterious effect upon the fœti in the uterus. These observations and the findings of Fellner, if confirmed by further experiments, in my opinion, would be of eminent practical importance in view of the fact that various attempts have been made to use the x-rays in women for the diagnosis of intra-uterine and extra-uterine pregnancy¹¹⁸ and for the purpose of pelvimetry.

Ascarelli¹¹⁹ reported to the Medical Society of Rome the case of a woman of 38 years with a puerperal osteomalacia cured by the application of Roentgen rays. Ascarelli is convinced that the ovaries in this case had become atrophic from the effect of the rays.

OVARIAN GRAFTING.—The impetus for experiments with transplantation of ovarian tissue was furnished by two factors: by annoying nervous symptoms which often follow artificial menopause and by the observation that small rests of ovarian tissue, left after operations, may hypertrophy and continue to functionate normally. We differentiate two modes of ovarian grafting, the autoplasmic and the heteroplasmic, also called homoplasmic. The first mode consists in the transplantation of ovarian tissue of the same individual into another more suitable place. Autoplasmic grafting has been done more or less successfully in animals and also in human beings. Of a more recent date are the attempts at heteroplasmic grafting. The energetic efforts of Morris of New York along these lines of work seem to have been crowned by a most interesting practical result. He records¹²⁰

the case of a woman who gave birth to a full-term child four years after the ovaries of another woman had been transplanted into her broad ligaments. Morris duly emphasizes that only the removal of the ovaries with the angiotribe gives a guarantee that all ovarian tissue has been removed and excludes the possibility of a deception by an unintentional autoplasmic grafting. It is, however, striking that Morris does not mention the other possibility of a deception, namely, the presence of a third ovary. Unimpeachable cases of this sort have been recorded, and Manton¹²¹ only recently has added a new case to the five mentioned by Seitz.¹²²

It is undoubtedly true that the result of an ovarian graft is to a very large extent dependent upon the mode of operation. This point is at length discussed in a paper of Cramer,¹²³ in which he records two cases of heteroplasmic grafting. Following a suggestion of Professor Ribbert, who had shown that the central portion of a transplanted ovary as a rule becomes necrotic, Cramer dissected off the stroma portion and transplanted only the cortex. One patient began, subsequent to this operation, to menstruate regularly after an amenorrhoeic period of a year and a half. A very good resumé of all the work so far done in ovarian grafting is presented in an article of Pankow.¹²⁴ Five of his cases of autoplasmic transplantation showed some improvement in their condition thus apparently proving the continued function of the ovaries transplanted into a peritoneal duplication between bladder and uterus. Two attempts of heteroplasmic grafts made in women castrated two and three years before, proved failures. In experiments on animals Basso¹²⁵ found that in heteroplasmic transplantation the ovary first passes through a period of degeneration due to insufficient nutrition, followed by regeneration when the newly formed capillaries have established the connection with the blood vessels of the surrounding tissue.

CARCINOMA.—If it would seem at all permissible to speak of progress during the past year in regard to the cancer problem, it certainly could be done concerning the efforts to bring this class of patients early into the hands of the skilled physician by disseminating widely among physicians and laity a better knowledge of the earliest symptoms of uterine cancer. Although Duehrssen¹²⁶ claims the priority for this idea, we undoubtedly owe it to the persistent work of Winter in this direction, that the advisability and the striking advantages of such a systematic propaganda today are generally recognized and appreciated. Winter has demonstrated that these efforts in various parts of Germany have lead to a distinct increase in the number of those sufferers from uterine carcinoma who present themselves to the general practitioner and the gynecologist in an early stage of the disease, and that this growth of the percentage of operable cases has been followed by a corresponding improvement of the permanent results of the modern cancer operations. During the past year the medical profession of France, Austria and Italy have taken up the fight against carcinoma

along the same lines, and with satisfaction we can point to the fact that a beginning has also been made in our country. A "Committee on Cancer of the Uterus," appointed by the American Medical Association, has submitted a report¹²⁷ which will be distributed broadcast among the physicians and should be most carefully perused. But experience in Germany has clearly shown that such a propaganda becomes truly effective only if the interest of the public at large is aroused by a very cautious use of the lay press in this campaign. Therein most probably will lie the greatest difficulty in this country. Extreme care will have to be exerted to prevent the yellow journals from appropriating this serious problem as a welcome topic for sensational articles and as an inducement to solicit more and larger advertisements from the numberless exploiters of fake cancer cures.

Various phases of the cancer problem have been interestingly discussed before the section of obstetrics and gynecology at the last meeting of the A. M. A. in Boston. Clark,¹²⁷ in dealing with the early diagnosis, lays stress upon the necessity of revising some of the antiquated ideas concerning the etiology and symptomatology of uterine carcinoma. The usual clinical examination, if carefully made in every case, almost invariably proves sufficient in establishing the diagnosis in cervical cancer.

The two radical abdominal operations almost generally practised today are those developed by Wertheim and Mackenrodt, the former undoubtedly enjoying an ever-increasing popularity. Brunet,¹²⁸ a pupil of Mackenrodt, advances some good arguments in favor of abdominal operation in general and of that invented by his former chief in special. He bases his deductions upon the results of the extensive investigations, which of late have been made concerning the successive advance of a cervical cancer toward the surrounding lymph glands. Brunet, in this article, also tries to prove that at present the primary mortality of the extensive abdominal operation is but very slightly greater than that of the vaginal method. Cullen, in a signed editorial,¹²⁹ expresses the opinion that the time for vaginal operations has passed and that they are permissible and preferable only under special conditions. The abdominal should be the route of choice. He employs at present the Wertheim method, but he is inclined to believe that in future possibly Mackenrodt's operation may be given preference. The transverse horse shoe incision of the latter gives a better exposure of the field of operation and thus shortens the duration of the operation. The most interesting contribution to the question of the Wertheim operation comes from Wertheim himself,¹³⁰ who summarizes the condition of 180 of all the patients operated by him. Of these, at the time of the report, 60 were free of recurrence more than five years, 60 more than four, and the last 60 more than three years. In his own hands the operation now has a primary mortality of only 9 per cent. A most noteworthy summary of results obtained with this opera-

tion in the gynecologic clinic of the University of Graz (Austria) is presented by Schindler.¹³¹ From 1899 to 1904 a total of 588 patients suffering from a uterine carcinoma were seen, of whom 400 entered the hospital. Of these 193 (48.25 per cent) were operated upon. The abdominal Wertheim operation was performed in 117 instances, with a primary mortality (including all deaths) of 13.67 per cent. At the time when this paper was prepared concerning 81 of the operated patients, some information could be obtained, from one to five years having passed since the operation. Nine had died, four apparently from intermittent diseases, for the other five the cause of death being unknown. The percentage of absolute cure is 5 per cent (of the 400 patients admitted to the hospital) or 2.65 per cent of all the 588 cancer patients seen in the clinic. Of all the patients in whom at the time of operation carcinomatous metastases were found in lymph glands, only one was found still free of a recurrence. Taking into consideration only those cases which were operated upon more than five years ago, the absolute cure amounted to a little more than 4 per cent of all cases admitted to the clinic. The results, in Schindler's opinion, are not very satisfactory. This is, however, undoubtedly to a large extent due to the fact that in the clinic of Graz on principle, preference is given to the vaginal operation of Schuchardt, while the operation of Wertheim is reserved only for the cases in which the carcinoma apparently has invaded the parametrium, and lymph glands probably are involved. Schindler's statistics thus are based almost entirely on unfavorable cases.

Rosthorn, of Heidelberg, who attended the Boston meeting of the A. M. A. in a most excellent paper¹²⁷ dwelt in detail almost on every point of interest and importance in the cancer problem. He defended the abdominal operations as the only which are rational, since they certainly permit the eradication of the parametria in the most radical manner. Glands should be removed in every case as thoroughly as possible, and in case of recurrence another attempt should be made to either save or at least prolong the patient's life by a new operation. It is very interesting to note that most of the speakers in the discussion at the Boston meeting were heartily in favor of the abdominal route. A year ago at the meeting of the American Gynecological Association¹³² practically all speakers expressed a preference for the vaginal operation.

While there is a general consensus of opinion concerning the necessity of a thorough removal of the parametria, opinions are still divided in regard to the removal of the lymphglands. Clark,¹³³ once one of the strongest advocates, in fact one of the originators of the routine extirpation of the pelvic lymphglands, to-day states: "My own conclusion, although very reluctantly reached—for I had hoped for decided improvements in permanent results—is, that we lose more than we gain in the radical operations when the lymphglands are painstakingly extirpated,

and to remove here and there a palpable enlarged gland will certainly not promote the patient's interests, so far as a radical cure is concerned. My own rule, therefore, is to remove one or more glands for microscopic examination, provided they are palpably enlarged and easily accessible. If metastasis is found, the prognosis is inevitably bad." Clark's present mode of procedure consists in the extirpation of the uterus with the upper portion of the vagina and the surrounding connective tissue by means of the cautery. Emil Ries¹²⁷ warns against this "conservative radicalism." In his belief the giving up of the routine extirpation of all lymphglands by Wertheim and his followers easily accounts for the fact that modern "radical" operations have an ever decreasing primary mortality. But this new tendency of removing just a few glands here and there or none at all, marks a step backward. The present Wertheim operation in Ries' belief is little else but an abdominal operation after Freund with the addition of the dissection of the ureters. Ries' original idea of a proper operation for uterine carcinoma differed from all former operations of this kind in that he tried to apply to it the principle now generally adopted for all cancer operations; that is, to remove the regional lymphglands. It hardly can be denied that the various modifiers of the original Ries operation have lost sight of the underlying original feature of this operation and thus Ries seems well justified in his complaint that the present abdominal method will tend to discredit the movement started by him. "The permanent results by such half-way measures can be expected to be only slightly better than those of the old hysterectomies."

According to Veit¹²⁸ sepsis is one of the chief causes of the high immediate mortality of the extended abdominal operations, followed next in importance by the deleterious effect of a prolonged anesthesia upon a weakened heart in advanced cases. He thinks that these two causes could be almost eliminated by the prophylactic use of the antistreptococcus serum (10 to 20 ccm. injected before operation), and by substituting medullary anesthesia with stovain for a general narcosis.

Concerning the vaginal operation for uterine carcinoma it must again be stated that American writers still fail to appreciate the fact that German writers in speaking of the vaginal operation refer only to the Schuchardt operation, the only vaginal operation which permits the extensive extirpation of the parametria. The extirpation of the cancerous uterus without removal of the parametria, in view of our present knowledge, falls but little short of malpractice. Attention, therefore, is called to an article of Sir William Sinclair,¹²⁵ because, to my knowledge, it is the first clear and detailed description in the English language of the so-called Schuchardt operation, a vaginal hysterectomy facilitated by deep paravaginal incisions. That Duehrssen¹²⁶ also claims priority for this operation may be stated in this connection. Some gynecologists perform this operation entirely with the cautery and apparently obtain extremely

satisfactory results. This vaginal cauterization operation is, e. g., the operation of choice in the clinic of Chrobak in Vienna, since 1900. The results of 309 operations performed in this clinic since 1890 are described by Blau.¹³⁷ This figure includes 196 cases of simple hysterectomy with the cauterization, and 113 cases of igniextirpation with paravaginal incision. The primary mortality was 5.8 per cent. At the time of the writing of the paper information could be obtained concerning 291 patients, of whom were alive 244. Of those operated upon more than five years ago, 25 per cent of the cervical cancers, and 77 per cent of the corporeal cancers, or an average of 30.4 per cent of all patients were free of recurrence. The percentage of absolute cures is 5.64 per cent of all cancer patients seen from 1890 to 1903 in the service of the clinic. Of course, no definite results can be given concerning the 113 vaginal igniextirpations with Schuchardt incision performed from 1900 to 1903, but the following interesting facts may be recorded: The immediate mortality (including all deaths) was 6.19 per cent. Only in five instances adjoining organs were injured. The operability has risen to almost 33 per cent (which, however, is still far distant from the operability of 82 per cent obtained by Winter, undoubtedly as the result of his personal propaganda). Considering only those 31 cases, in which the complete Schuchardt operation has been performed with the cauterization more than five years ago, the percentage of absolute cures has risen to the unexcelled figure of 45.8 per cent. Certainly a splendid success of a vaginal method. Kuestner's clinic in Breslau for the last two years has adopted the Wertheim method, but just this fact has induced Hannes¹³⁸ to investigate what has become of the patients previously operated upon by the vaginal method. Calculated according to Wertheim he found a permanent cure of 28.8 per cent. This again is a figure which hardly justifies the claim that the time for vaginal methods has passed.

Important contributions have appeared concerning the lymphgland question. Cigheri¹³⁹ draws interesting conclusions from his extensive investigations made in the gynecologic institute of Pestalozzi. As a rule a lymphgland infection does not occur before the parametrium is invaded. Cancers developing from the cylindrical epithelium of the cervical mucosa usually cause metastases earlier than carcinomata of the portio or the corpus. Sitzenfrey¹⁴⁰ supports the views of Meyer and Brunet concerning the peculiar epithelial ducts at times found in the lymphglands of patients suffering from a uterine cancer. Meyer first had claimed that these are lymphvessels or lymphducts in which the endothelium had proliferated. They both thought that this proliferation is the result of a chronic irritation. Sitzenfrey now adds the interesting new information that in all cases of uterine cancer in which these epithelial ducts are found in the glands, there are always evident the signs of a chronic inflammation of the uterus, its appendages or the peritoneal covering. These epithelial

ducts often very closely resemble carcinoma and often can be properly diagnosticated only by dividing the whole gland in serial sections. These ducts may actually form the basis for the development of a neoplasm. In his belief it is possible that some of the obscure retro-peritoneal cysts containing a ciliated epithelium may have arisen from such epithelial ducts of chronically inflamed lymphglands. They also may give rise to the development of a lymphangio-epithelioma.

Of unusual interest and probably practical importance are the results of Frommer's¹⁴¹ investigation into the clinical and pathologic-anatomic behavior of lymphglands in cases of malignant growths, especially of cervical cancer. In these cases fever is a very common occurrence. After a critical consideration of all the various ways in which this rise of temperature has been explained he comes to the conclusion that it must be due to the entrance of bacteria into the blood. On their way from the carcinoma to the blood these microorgans have to pass through lymphglands. If in a diseased condition they probably will offer but little resistance to their passage. Microorganisms always can be found in the regional glands. They produce certain alterations of the surrounding tissue and at times lead to a partial necrosis of the gland. The result of the bacteric infection of the gland may be the formation of granulation or new connective tissue. An additional cause for the formation of such tissue probably is also furnished by toxic substances produced in the neoplasm. This formation of new connective tissue must, however, be looked upon as a beginning of spontaneous cure, since glands, affected in this manner certainly form a greater obstacle against the further progress and distribution of the cancer. The newly formed tissue may lead to a secure encapsulation of a gland already infected with carcinoma and result in necrosis and final obliteration of this gland. An important role in the destruction of the cancer toxins within the gland is played by the eosinophiles and the mast cells, especially by the latter because they propagate the proliferation of the connective tissue. According to the investigations of Frommer these mast cells develop from the adventitia of the small vessels.

BILATERAL OVARIAN CARCINOMA.—In a large number of instances a carcinoma which affects both ovaries in fact is the metastasis of a primary carcinoma in some other organ. In order of their frequency Amann¹⁵¹ ranges the primary growths as follows: Carcinoma of the stomach, uterus, breasts, skin, intestines, gallbladder and suprarenal glands. In most cases in which the primarily affected organ lies within the abdominal cavity the infection of the ovaries probably is due to a direct contamination with carcinomatous tissue which has entered the peritoneal cavity after the primary growth in its progress has reached the peritoneal covering of the affected organ. In other cases the dissemination occurs by way of the lymph and blood vessels. A careful ex-

amination of all abdominal organs prior to the operation of every ovarian carcinoma, especially if bilateral, is of extreme importance. Of course, the responsible primary tumor may be so small that it may escape detection. This point of the necessity of a most painstaking search for a primary growth is also emphasized by Stickel,¹⁴² who in 13 cases of metastatic ovarian carcinoma found the primary growth in the stomach nine times, in the breast three times and in the ascending colon once. The metastases in the ovaries may be detected at a time when no enlarged lymphglands can be palpated. Bland-Sutton¹⁴³ is inclined to believe that the majority of all bilateral solid ovarian tumors are carcinomatous, and, as a rule, are metastatic formations. In women who died of gastric cancer in at least 10 per cent of the cases, metastases are found in the ovaries. The theory that in many of these cases particles of carcinomatous tissue which have entered the peritoneal cavity, have been carried directly to the ovaries, has induced Kraus¹⁴⁴ to investigate the permeability of the germinal epithelium for corpuscular elements. The results of his experiments furnished important proof in support of this theory. A new series of experiments made by Wolfheim¹⁴⁵ leads to results slightly at variance with those of Kraus. Wolfheim found that the intact germinal epithelium positively prevents the ingress of corpuscular elements into the ovarian stroma, that, however, even the physiologic rupture of the Graafian follicles disturbs this integrity, and actually permits such elements to invade the stroma.

Of late with increasing frequency, reports have appeared of cases in which a malignant growth developed in abdominal scars after the removal of apparently benign ovarian tumors. The question arose whether particles of a benign ovarian growth could after implantation lie dormant in the abdominal wall for a long while and then suddenly acquire a malignant character. This question is of eminent biologic and practical interest, and is by Polano¹⁴⁶ answered in the affirmative. In his opinion malignant degeneration occurs in some instances, while for others the following three explanations can be given: The ovarian tumor may have been malignant, at least partially. An exact and thorough examination of large ovarian tumors is impossible. A primary cancer, lying unrecognized somewhere in the abdomen, may lead to metastases in the abdominal scar. Or, a carcinoma may arise primarily in the abdominal walls, originating from remnant tissue of the urachus or the vitelline duct.

ATONY OF THE NON-PREGNANT UTERUS.—The question whether the non-pregnant uterus during a curettage or even solely due to the introduction of a uterine sound can relax and become atonic has of late led to a rather interesting controversy among some of the leading continental gynecologists. A history of this dispute is given by T. Hurst Maier.¹⁴⁷ It first began between Kossmann and Strassman, the former reporting two cases of uterine paralysis observed during curettage of non-pregnant uteri, the latter contending that this is impossible and declaring that

Kossmann's observation is not one of paralysis but of unintentional instrumental perforation of the uterus. Kossmann then tried to prove that an atony may occur in a non-puerperal uterus just as well as in the puerperal organ. During a dilatation or curettment one has only to measure the length of the uterine cavity just before and immediately after dilatation, to convince himself that its length has increased from one to two centimeters. This phenomenon is due to a relaxation of the tonus of the musculature. According to Schaeffer the relaxation is a response of the whole uterine muscle to the irritation of the internal os. The result may be one of the two; a limited relaxation and distention of the wall in which the elastic consistency of the wall is still almost normal, or a complete atony which transforms the uterine body in that thin walled, flaccid sac of which Kossmann speaks. Besides the contribution of Schaeffer those of Van Tussenbroek have unquestionably demonstrated the correctness of Kossmann's contention. Tussenbroek¹¹⁸ in certain aspects modifies the views of Schaeffer and contends that the tone relaxation of the afferent vessels, occurring coincidentally with the tone relaxation of the uterine musculature, results in an increased blood supply to the relaxed uterus. The tortuous blood vessels straighten out from the increased blood pressure. Thus the whole uterus swells like an erectile organ. If now for certain reasons the congestion disappears before the muscles have regained their tonus, the uterine wall loses its tension and the condition becomes one of complete atony. Maier, since his attention has been called to this possibility, has observed several clear cases of atony of the non-puerperal uterus. Asch¹¹⁹ thought that the paralysis of the uterine muscle in most instances is due to the effects of the general anesthesia, but this theory is vigorously objected to by Kossmann¹²⁰ and Tussenbroek. In this connection mention can be made of a recent paper of Kurdinowski¹²¹ in which he shows that chloroform does not have a paralyzing effect even on the puerperal uterus as is so generally assumed. Tussenbroek in a previous article¹²² has clearly brought out the practical side of this problem, proving that this sudden change in the tonus of the uterine muscle during curettment forms a factor of no small importance in the etiology of instrumental perforation. Of interest in this connection also is a paper of Fellner¹²³ in which he describes the nerves which regulate the contractions of the uterus. The tonus of the uterine musculature is preserved by the action of the *Nervus erigens* and the *Nervus hypogastricus*. A prolonged mechanical irritation during dilatation and curettment results in a fatigue of these nerves and a consequent relaxation of the muscle. Fellner, like Schaeffer and Tussenbroek, differentiates between the atonic relaxation with preservation of some of the tonus and complete relaxation. In a very convincing way he explains these two conditions by means of his nerve theory.

MALPOSITIONS.—In a most ingenious manner E. C. Dudley¹²⁴ employs

the broad ligaments in a vaginal operation for prolapse. After having pushed back the bladder he severs the lower third of both broad ligaments and unites the cut ends in the middle line in front of the cervix. This procedure pushes the uterus backward and upward and certainly must help to hold the organ in this better position. In a similar way he unites the stumps of the broad ligaments after supravaginal hysterectomy in order to gain a stronger vaginal roof. The fact deserves to be stated here that this certainly is one of the best illustrated articles which has ever appeared in a medical weekly. The excellency and clearness of these illustrations, executed in two colors, reflects creditably upon the present make-up of the *Journal of the Am. Med. Association*.

(Based upon the results of Mackenrodt's investigations of the anatomy of retroflexion, Alexandroff in 1903¹⁵⁵ has described an operation for retroflexion in which he, like Dudley, unites the lower portions of both broad ligaments in front of the cervix, however, without first dissecting off these portions from the cervix.)

The possibilities for using the round ligaments in the correction of a uterine retroflexion seem exhausted. New operations continually are described, but it seems difficult to recognize the minute differences in technique between them and the methods used by others. Montgomery¹⁵⁶ describes in a well illustrated article a modification of the operation first practised by Gilliam and later improved by Simpson. He carries a loop of the round ligament through the broad ligament between its folds beyond the peritoneum, when it is brought through the abdominal wall and secured upon the aponeurosis. This operation is also practised by Fisher.¹⁵⁷ C. H. Mayo¹⁵⁸ describes the method in use in Rochester. It is the same operation differing only in the following detail of technique: Mayo introduces a curved forceps or a Cleveland ligature carrier from the aponeurosis along the round ligaments into the peritoneum to grasp the round ligaments, while Montgomery carries the loop from within outward. Very similar, if not identical, is a "new method of uterine ventrofixation" invented by Casalis.¹⁵⁹

Reuben Peterson¹⁶⁰ shows that both round ligaments can be shortened within the inguinal canals through a single suprapubic incision, made either transversely or in the median line. The obvious advantage of this operation lies in the fact that thus a laparotomy can be combined with the bilateral shortening of the round ligaments according to Alexander-Adams without necessitating three separate incisions through the skin.

A very instructive paper of Watkins¹⁶¹ on operations of large uterine prolapses establishes the interesting fact that the so-called Wertheim-Schauta operation, for which also Duehrssen claims priority, more properly should be known as the Watkins operation.

NEW BOOKS.—Winckel's *Handbuch der Geburtshilfe* and Martin's *Krankheiten des Beckenbindegewebes und Beckenbauchfelles* have been

completed, two monumental works, which present every feature of the respective subjects with that minuteness and thoroughness in which German authors easily outrank all the scientific writers of the civilized world. In a series of three volumes, published by Lea Brothers & Co. and called the Practitioner's Library, a Practice of Gynecology has appeared under the editorship of Boveé and a Practice of Obstetrics edited by Reuben Peterson. Pozzi's *Traité de Gynécologie*, known the world over in its numerous translations, is appearing in its fourth edition, the first volume having so far been published. Schauta, who several years ago has made an attempt to deal with obstetrics and gynecology conjointly in one work, in a new edition adopts the modern idea of presenting these subjects separately. The first volume of his work, devoted entirely to obstetrics, has appeared. One of the most beautifully illustrated volumes extant is a presentation of the technique of vaginal operations by Wertheim and Micholitsch. It would seem impossible, but the illustrations of this atlas actually surpass in clearness and beauty even those of Kelly's *Operative Gynecology*, which has appeared in a second revised and enlarged edition. The necessity for new editions of the textbooks of obstetrics of Hirst and Edgar and the gynecology of Ashton proves the popularity these works are at present enjoying among teachers and students.

BIBLIOGRAPHY.

LIST OF ABBREVIATIONS USED:

- A.—Abstract.; n.—Number; p.—page; v.—volume.
- A. de G.—*Annales de Gynécologie et d'Obstétrique*.
- A. f. G.—*Archiv. fuer Gynaekologie*.
- A. J. o. O.—*American Journal of Obstetrics*.
- A. J. o. S.—*American Journal of Surgery*.
- A. o. S.—*Annals of Surgery*.
- B. Ac. m. Par.—*Bulletin de l'Académie de Med. de Paris*.
- B. J. H. H.—*Bulletin of Johns Hopkins Hospital*.
- B. J. o. O.—*Jour. of Obstet. and Gynecology of British Empire*.
- B. kl. W.—*Berliner klinische Wochenschrift*.
- B. m. J.—*British Medical Journal*.
- C. o. M.—*Courier of Medicine*.
- D. m. W.—*Deutsche medizinische Wochenschrift*.
- Hg. B.—*Hegar's Beiträge zur Geburtsh. und Gynaekologie*.
- Int. M. J.—*Interstate Medical Journal*.
- J. A. M. A.—*Jour. of Americ. Med. Association*.
- Lanc.—*Lancet (London)*.
- M. f. G.—*Monatschrift fuer Geburtsh. und Gynaekologie*.
- M. m. W.—*Muenchner medizinische Wochenschrift*.
- M. Rec.—*Medical Record*.
- N. Y. M. J.—*New York Medical Journal*.
- S. G. O.—*Surgery, Gynecology and Obstetrics*.
- V. kl. V.—*Volkmann's klinische Vortraege*.
- W. kl. W.—*Wiener klinische Wochenschrift*.
- W. m. W.—*Wiener medizinische Wochenschrift*.
- Zb. f. G.—*Zentralblatt fuer Gynaekologie*.
- Zs. f. G.—*Zeitschrift fuer Geburtsh. und Gynaekologie*.

1. M. f. G., Sept., '06, p. 299.
2. A. f. G., v. 80, p. 99.
3. Zb. f. G., n. 48, '06, p. 1333.
4. Zb. f. G., n. 8, '06, p. 233.
5. Zs. f. G., v. 57, p. 113.
6. M. f. G., July, '06, p. 44.
7. Zb. f. G., July, '06, p. 247.
8. Zb. f. G., n. 12, '06, p. 348.
9. Zb. f. G., n. 48, '06, p. 1321.
10. Zb. f. G., n. 3, '06, p. 78.
11. Zb. f. G., n. 32, '06, p. 897.
12. Zb. f. G., n. 38, '06, p. 1042.
13. Zs. f. G., v. 57, p. 371.
14. Zb. f. G., n. 18, '06, p. 512.
15. A. f. G., v. 78, p. 52.
16. M. m. W., n. 51, '05, p. 2481.
17. A. in A. J. o. O., Jan., '06, p. 133.
18. Zb. f. G., n. 22, '06, p. 617.
19. Zb. f. G., n. 30, '06, p. 846.
20. Zb. f. G., n. 3, '06, p. 92.
21. M. f. G., March, '06, p. 362.
22. Hg. B., v. 10, p. 427.
23. A. in A. J. o. O., Oct., '06, p. 566.
24. Zb. f. G., n. 12, '06, p. 351.
25. Zb. f. G., n. 8, '06, p. 239.
26. Zb. f. G., n. 26, '06, p. 737.
27. Zb. f. G., n. 44, '06, p. 1213.
28. Zb. f. G., n. 44, p. 1209.
29. Zb. f. G., n. 48, '06, p. 1326.
30. M. f. G., Sept., '06, p. 414.
31. W. m. W., n. 5, '06.
32. A. J. o. O., Dec., '06, p. 771.
33. S. G. O., July, '06, p. 42.
34. M. Rec., May 26, '06.
35. A. J. o. O., Dec., '06, p. 849.
36. S. G. O., Dec., '06, p. 756.
37. S. G. O., Sept., '06, p. 402.
38. Zs. f. G., v. 56, p. 351.
39. S. G. O., July, '06, pp. 76, 79, 167.
40. S. G. O., March, '06, p. 259.
41. A. J. o. S., June, '06, p. 161.
42. S. G. O., Sept., '06, p. 356.
43. Zb. f. G., n. 10, '06, p. 289.
44. Zb. f. G., n. 15, '06, p. 417.
45. Zb. f. G., n. 26, '06, p. 748.
46. D. m. W., n. 5, '06.
47. J. A. M. A., Nov. 10, '06, p. 1531.
48. Zb. f. G., n. 18, '06, p. 509.
49. A. f. G., v. 77, p. 485.
50. A. f. G., v. 79, p. 1.
51. Zb. f. G., n. 1, '06, p. 1.
52. S. G. O., Nov., '06, p. 593.
53. A. J. o. O., Aug., '06, p. 214.
54. Med. Mirr., Aug., '06, p. 314.
55. C. o. M., Oct., '05.
56. A. f. G., v. 76, p. 537.
57. M. m. W., n. 7, '06, p. 297.
58. B. J. H. H., March, '06, p. 71.
59. A. J. m. Sc., Sept., '06.
60. N. Y. m. J., April 21, '06, p.
61. Zb. f. G., n. 2, '06, p. 41.
62. N. Y. m. J., May 5, '06, p. 897.
63. A. J. o. O., Feb., '06, p. 146. 813.
64. A. de G., Sept., '06, p. 547.
65. A. in Zb. f. G., n. 31, '06, p. 886.
66. M. m. W., Dec. 19, '06, p. 2484.
67. Zb. f. G., n. 24, '06, p. 693.
68. Zs. f. G., v. 57, p. 150.
69. D. m. W., n. 46, '06, p. 1854.
70. A. in M. m. W., n. 33, '06, p. 1644.
71. M. f. G., Dec., '06, p. 748.
72. A. in Zb. f. G., n. 41, p. 1134.
73. Zb. f. G., n. 23, '06, p. 649.
74. Zb. f. G., n. 31, '06, p. 865.
75. B. Ac. m. Par., April 3, '06, p. 489.
76. Zb. f. G., n. 25, '06, p. 719.
77. B. kl. W., Dec. 3, '06, p. 1559.
78. A. in A. J. o. O., June, '06, p. 871.
79. B. J. o. O., Feb., '06, p. 102.
80. A. in B. J. o. O., Feb., '06, p. 114.
81. S. G. O., Nov., '06, p. 621.
82. A. in M. m. W., n. 13, '06, p. 627.
83. A. de G., Feb., '06, p. 65.
84. D. m. W., n. 19, '06.
85. M. f. G., v. 24, p. 373.
86. B. kl. W., June 11, '06.
87. Zb. f. G., n. 22, '06, p. 62.
88. M. m. W., n. 27, '06, p. 1298.
89. Zb. f. G., n. 27, '06, p. 763.
90. Zb. f. G., n. 27, '07, p. 769.
91. Zb. f. G., n. 37, '06, p. 1019.
92. M. Rec., March 31, '06, p. 489.
93. Zs. f. G., v. 52, p. 235.
94. Zs. f. G., v. 52, p. 500.
95. Hg. B., v. 10, p. 241.
96. Zs. f. G., v. 58, p. 328.
97. B. J. o. O., Aug., '06, p. 155.
98. Zs. f. G., v. 58, p. 476.
99. A. f. G., v. 79, p. 277.
100. M. m. W., n. 48, '06, p. 2340.
101. A. J. o. O., Jan., '06, p. 73.
102. N. Y. M. J., May 19, '06, p. 1008.
103. A. in Zb. f. G., n. 43, '06, p. 1208.
104. B. M. J., Nov. 3, '06.
105. A. J. o. O., Dec., '06, p. 782.
106. J. A. M. A., Dec. 8, '06, p. 1881.
107. Zs. f. G. v. 57, p. 8.
108. B. J. o. O., July, '06, p. 1.
109. J. A. M. A., March 10, '06, p. 695.
110. A. J. o. O., June, '06, p. 799.

111. J. A. M. A., Sept. 8, '06, p. 768.
112. A. in B. J. o. O., April, '06, p. 300.
113. Zb. f. G., n. 43, '06, p. 1184.
114. B. kl. W., n. 3, '05.
115. A. f. G., v. 78, p. 458.
116. Zb. f. G., n. 22, '06, p. 630.
117. M. m. W., n. 44, '06, p. 2147.
118. B. J. o. O., June, '06, p. 481.
119. A. in J. A. M. A., July 7, '06, p. 46.
120. M. Rec., May 5, '06, p. 697.
121. S. G. O., Jan. '06, p. 29.
122. V. kl. V., No. 286.
123. M. m. W., n. 39, '06, p. 1906.
124. A. in Zb. f. G., n. 44, '06, p. 1224.
125. A. f. G., v. 77, p. 51.
126. S. G. O., Sept., '06, p. 376.
127. J. A. M. A., Dec. 8, '06.
128. A. f. G., v. 78, p. 632.
129. S. G. O., March, '06, p. 318.
130. W. kl. W., n. 26, '06.
131. M. f. G., Jan., '06, p. 78.
132. Int. M. J., Jan., '06, p. 95.
133. S. G. O., Feb., '06, p. 146.
134. B. kl. W., n. 8, '06.
135. B. J. o. O., April, '06, p. 241.
136. S. G. O., Sept., '06, p. 376.
137. Hg. B., v. 10, p. 375.
138. Zs. G., v. 57, p. 215.
139. M. f. G., v. 24, p. 182.
140. Zs. f. G., v. 57, p. 419.
141. M. m. W., Dec. 15, '05.
142. A. f. G., v. 79, p. 605.
143. B. m. J., May 26, '06.
144. M. f. G., v. 14, p. 1.
145. M. f. G., v. 24, p. 63.
146. Zs. f. G., v. 56, p. 416.
147. S. G. O., Nov., '06, p. 616.
148. Zb. f. G., n. 2, '06, p. 47.
149. Zb. f. G., n. 41, '05, p. 1250.
150. Zb. f. G., n. 50, '05, p. 1529.
151. A. f. G., v. 80, p. 289.
152. Zb. f. G., n. 34, '05, p. 1054.
153. Zb. f. G., n. 26, '06, p. 742.
154. J. A. M. A., Nov. 17, '06, p. 1605.
155. Zb. f. G., n. 25, '03, p. 762.
156. S. G. O., Nov., '06, p. 605.
157. A. o. S., Sept., '06.
159. A. in B. J. o. O., Aug., '06, p. 184.
160. S. G. O., July, '06, p. 85.
161. S. G. O., June, '06, p. 659.
158. S. G. O., Feb., '06, p. 203.

NEUROLOGY AND PSYCHIATRY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

A consideration of the literature of neurology and psychiatry of the year 1906 shows that the activity in point of production has suffered no diminution over that of previous years. An immense amount of work has appeared in printed form and the task of the reviewer grows more difficult as the effort is made to be more critical and judicious in the selection of papers to be mentioned in a review as limited as this is compelled to be.

Upon closer examination, however, certain general tendencies can be observed which even in one year's work make themselves manifest. By attempting to follow these tendencies certain subjects seem from year to year to attract the worker in neurology and psychiatry with an un-failing interest that is somewhat remarkable.

It is unfortunate, that in many instances, the points at issue are such that they can not be solved by any sort of dialectic writing and for that reason there is apparently a waste of effort which is burdensome to the mass of literature and to the readers of each year's output. It is too often the case that there is brought forward, as proof of this or that hypothesis not more than the writer's personal bias, unsupported by any convincing proof. That such work must each year be read, points to the necessity of some critical agency through which all this unnecessary product can be filtered. A *Centralblatt* on neurology and psychiatry with the critical feature strongly accentuated, is one of the present needs which is here strongly emphasized.

There seems to be ever ready at hand for the neurologists or psychiatrists, especially the latter, a tendency to the argumentative style of writing which is supplanting the record of patiently acquired facts. This is especially to be seen in papers appearing from the pens of what are termed the leaders on these subjects. They frequently scorn methods of clinical research and allow themselves to advance or support certain views which are supposed to be accepted simply because they emanate from names that carry a degree of authority. The dementia praecox question is an instance in point. On this subject an analysis of the papers show, with one or two exceptions, merely discussions on the classification feature of this disease. The psychiatrists seems to fight as shy of clinical facts as the neurologists are eager to make use of them. A return to the methods of clinical description is much to be wished for and this will probably come about when the neurologist and the psychiatrist see in their respective subjects no necessary line of demarkation.

In the review of last year it was deemed advisable to divide the subject into several groups in order to make the selection of papers easier. In this year's paper the following division will be observed:

1. Studies relating to the Anatomy, Physiology and Pathology of the central nervous system.
2. Papers relating to case reports, clinical statistics, and other clinical data.
3. Newer methods of therapy and new methods of clinical and laboratory diagnosis.
4. Brief consideration of notable text books and monographs.

There has been an immense amount of activity in the study of the anatomy of the nervous system. The consideration of the nerve cell and the neuroglia and the closely related question of autogenetic regeneration of peripheral nerves have attracted the greatest attention. The old question of the neuron doctrine treated in a more or less metaphysical way has given place to papers more or less experimental in nature which have for their object the acquirement of facts upon which a theory of nerve action will finally be based. An interesting departure to be noted this year is the appearance of papers dealing with the gross anatomy of the nervous system, a part of nervous anatomy which previously has been neglected. A good example of this sort of paper is Bramwell's¹ work on the recognition of segmental levels from the appearance of transverse sections. He attempts to provide a means of determining the level of the cord independently of the nerve roots. As these latter are so apt to become misplaced or destroyed during the post-mortem manipulation, the value of this simpler and more exact method can be readily seen. Economo² has written a timely article on the normal anatomy of the nerve cell. He has taken only the most recent work as a basis, and has attempted by means of a comparative study of different methods to establish some kind of procedure that shall be definite and more or less constant. He chooses for the unit of study, so to speak, the spinal cord cells. He began with Bethes' methods and notes the anatomical pictures so obtained. The details of the cell, the method of ending of the axis cylinders, the Golgi nets, the method of cell arborization and other points in relation to the cell and the termination in respect to the neighboring cell are thus studied by the technique of various investigators. The results are compared and the probable true appearances are then deduced. In this way some of the most important points in the disputed questions of nerve cell anatomy are considered. The paper can be said to be of importance, although the conclusions obtained have no sort of permanent value. The question of the value of the myelogenetic fields of the cortex of which of course Flechsig has been the warmest advocate, has been the subject of almost continuous study by O.

Voigt.³ Each year there appear papers by him or his students from his institute devoted to "Gehirn Forschung," in Berlin, which in many respects set a standard for work of this kind. His own contributions, as well as the work coming out of his institute, have not received in this country, at any rate, the attention which they merit. His latest paper on the subject has for its thesis the assertion that the physiological development of the cortex and the anatomical field formation do not go hand in hand, as Fleschig has advocated. It is only in a sense true. He lays stress on the study of cyto-architecture, which he believes will come more nearly solving the questions in anatomy and physiology, which the cortex from a developmental point of view presents. Jaddessohn⁴ determined by the use of a careful technique that the network in the ganglion cells, which are said by Cajal and Donaggio to be a continuation of the neurofibrils, is really an artifact. He believes that the truest pictures yet obtained, are those which can be demonstrated by Bethe's method. In a communication to the Societie Neurologique, Thomas⁵ calls attention in very strong terms to the advantages of the Cajal impregnation method, that is the new method. He points out its value in the normal anatomy as well as its use in pathological examinations. He insists upon the necessity of recognizing the part played by the fibrillæ in pathological conditions.

These few introductory papers will serve to show how far from settled most of the questions in mere anatomical outline are, and how careful all conclusions derived from data obtained from the technique now in use must be scrutinized. With all the new data at hand the solution of even the least important of the questions which occupy the attention of neuro-anatomists seems as far from solution as ever. Each year the neuron question (note that we no longer say theory or doctrine) comes in for its place in this review. The best possible introduction to this part of the review will be found in a brief review of the work that has appeared on the subject of the autoregeneration of peripheral nerves. That the neuron question has a close connection with the phenomena that take place when a peripheral nerve is cut and the two ends divided and some means used to prevent their union by contact, is no longer denied. It is quite possible that the solution of this problem will carry with it the final determination of the correctness or the falsity of this doctrine. The principle of physiological method underlying most of the experiments on this question is sufficient excuse for considering them in this part of the review. In a communication to the medical society at Pavia, Peroncito⁶ presents the conclusions derived from a series of experiments on animals, in which the sciatic nerve was cut and the appearances noted at various intervals of time from twenty-four hours to ten days. He found new fibres in the central stump and fibres apparently aris-

ing from the scar twenty days after the operation had been performed. Marinesco⁷ believes that the autoregeneration phenomena studied by means of Cajal's method can be brought into line with the idea of cell unity, on which the neuron doctrine is based. The same author and Minea,⁸ in a more extensive paper, supported by a series of very carefully planned experiments, conclude that it can be demonstrated by the use of Cajal's stain that autoregeneration at the peripheral end of a divided nerve, takes place. They do not deny, however, that new cells may exercise some trophic influence upon the axon. They base their conclusions upon the following observations. 1. Presence of newly formed fibres within the cell bodies and in the protoplasmic processes of the proliferated neurilemma nuclei. 2. Presence of newly-formed fibres in the peripheral segments of nerves torn from the cord. Besta⁹ concludes that all fibres in the peripheral segment degenerate. This fact, according to him, supports the view of the pluricellular origin of the regenerated fibres. The central segment exercises probably a stimulating influence. A review of the whole subject can be obtained from a series of papers by Lugaro,¹⁰ Münzer,¹¹ Raimann¹² and Lugaro.¹³ These papers are in the nature of a discussion and answers to criticisms. Lugaro criticises Raimann's paper and experiments in which the spinal cord together with the posterior root ganglion were torn away and yet new nerve fibres were found in the sciatic nerve. He believes that no definite proof exists at present that peripheral autoregeneration really takes place. Münzer and Fischer in a series of apparently carefully planned and executed experiments do not find sufficient evidence in support of the assumption that peripherally severed nerves autogenetically regenerate. It can be seen from these contradictory accounts how far from being settled this vexed question is. Its importance consists in that it is closely related to the neuron question and any uncertainty in this phase of the problem must naturally be reflected in all discussions which have to do with the neuron doctrine. Consequently the solution of the question as far as its later conception is concerned, must wait until the data upon which it is based are more definitely proven to be actual facts. The study of the neuroglia, always an attractive subject for the neuro-anatomists, still retains its former fascination, and although the results obtained from the work of the present are as yet meager they merit some consideration. Southard¹⁴ by working with a very refined technique and using as material various pathological brains has been able to contribute something definite to the knowledge of the subject. He has determined that the various layers of the cerebellum have their own characteristic reaction to different processes affecting them. His paper may be taken as a type of the better work that is being done in research on the finer anatomy of the nervous system. It must be said,

however, that the very refinement of technique carries with it a quality of confusion from which it is difficult to derive general conclusions. The most ambitious work that has appeared on this subject is by Stertz.¹⁵ This paper is interesting and merits attention not alone on account of its thoroughness but likewise because it is the first considerable piece of work in which Mallory's stain is used to great advantage, outside of Mallory's own contributions. In this paper is presented most of the positive facts that we possess on the subject of the neuroglia, not only in its normal relation but likewise in pathological conditions. As a contribution to our present knowledge of neuroglia, this work is easily the most significant that has appeared during the year. In the foregoing mention of anatomical contributions of the year just passed, nothing more is attempted than to indicate the varied kinds of activity that this department of research shows and to mention a few of the more typical pieces of work which are illustrative of this activity.

The physiology of the nervous system has been a field of great activity in so many departments that any sort of selection is practically impossible. Therefore only one piece of work will be mentioned in any detail chiefly because of its great value as a contribution to neurological science and because it represents a high type of research in the nervous system, the type that is experimental in method and clinical in application. The work in question is by Head and Sherrin.^{16 17} They start out by outlining a theory of afferent nerve function which is novel and interesting. This theory is based upon facts that have long been known. The theory thus formulated is tested by experiments carried out in the most painstaking manner and by observations of a clinical nature concerning chiefly the results of peripheral nerve injuries. An interesting feature of the work is the insistence of a much more exact method of sensory examination and supplying means by which this can be carried out. It is naturally impossible to abstract adequately a work of this kind or to indicate even the wealth of the material made use of in supporting the thesis advanced. The authors believe that our former conception of the function of sensation is not nearly accurate enough. The new sensory functions are called the protopathic and the epicritic. They are really specific qualitative and quantitative activities. The sensory mechanism of the peripheral nerves is found to consist of three systems. Deep sensibility which is readily recognized from our old conceptions, protopathic sensibility capable of responding to painful cutaneous stimuli and to the extremes of heat and cold. This is the great reflex system producing a rapid, widely diffused response unaccompanied by any definite appreciation of the locality of the spot stimulated. Epicritic sensibility by which we gain the power of cutaneous localization,

of the discrimination of two points and the finer grades of temperature called cool and warm. This is the theory in outline. The second of these papers is concerned with clinical data and experiments on the living, one of the authors himself being the subject of the experimentations which are used to examine and test the theory so advanced. This second paper comes very near being a model of a clinical paper which has for its object the proof of a physiological theory. It should be read for this if for no other reason.

Some mention should be made here of a class of work that for some time has been somewhat neglected in physiology and that is the study of brain weights in relation to physiological function. Under new conditions and with more advanced technique, valuable information can be obtained. Such papers by Pearl¹⁸ and Vogt,¹⁹ the latter on absolute brain weight, are of this sort. Barker,²⁰ always a firm upholder of the validity of the neuron doctrine, in the Harvey lecture of this year brings the facts of the recent work on the subject forward to the present. This is an eminently readable paper. The early history of the neuron doctrine is reviewed and all the objections that have been advanced against its validity are fairly stated. Barker brings forward as a further proof the work of Harrison that had not at that time appeared, and comments upon it as being the most valuable piece of investigation that has come out in the last ten years on that subject. Altogether Barker makes a strong case for the persistence of the neuron doctrine of course, from the point of view of one of its staunchest supporters. A very interesting contribution to the physiology of speech should be noted here chiefly because it threatens to shake one of the most firmly established of our ideas on the mechanics and the localization of the speech center. Marie²¹ believes as a result of the study of some fifty autopsies that in cases of aphasias of various kinds he is enabled to say that all our previous ideas in regard to the localization of the motor speech center at the foot of the third frontal convolution are wrong. He points out that in all aphasias of all sorts there is always a lack of understanding of spoken words. Some of the reasons for his stand on the point of localization are that there are cases of disturbances of the left Broca convolution in right-handed people without speech disturbance. There are cases of Broca's aphasia with an intact third frontal convolution. Briefly these are some of his conclusions. Wernicke aphasia is the result of a defect in intelligence, by which the ability to understand spoken words, to write and to read is diminished or lost. Broca's aphasia consists in this plus anarthria. Aphasia as a unit is produced only in the event of a lesion in the territory of Wernicke. This paper has attracted a great deal of attention and discussion as may well be imagined. The consensus of opinion seems to be that it is best

to wait until confirmatory evidence is ready and attention might be called to the unusual fact that conclusions derived from the study of the autopsy material of fifty aphasics is a pretty difficult problem to attack. It might be mentioned that another form of aphasia has been described by Raymond and Egger.²² A criticism by Dejerine²³ upon the justification of this new variety, adds to the already complicated subject of speech disturbances. This new condition is called tactile aphasia and consists in the inability to recognize and name objects placed in the right hand, with ability to do so if they are placed in the left. Dejerine believes that another interpretation of this phenomena is possible so that it is not necessary to establish a new form of aphasia.

The most notable paper, all things considered, that has appeared in the pathology of the nervous system this year, has been Robertson's²⁴ Morrison lectures on the pathology of general paralysis of the insane. In these lectures he sums up the work that has been done on the pathology of this disease in the Scottish Asylum's laboratories for the past three or four years. Although Robertson's views have been given publicity before, in several shorter papers, nowhere has it been possible to appreciate thoroughly his novel views and to understand how they have become developed. Whatever difference of opinion there might be in regard to the correctness of the view he holds, the conclusions that he has arrived at must be respectfully considered because they were arrived at only after the most careful experiments, exhaustive microscopical observations and deductions made from them. A very brief summary of his views may be stated as follows: He does not believe that any theory holding the syphilitic or the metasyphilitic origin of dementia paralytica explain all the facts nor enough of them to make this theory seem probable. A study of many brains from dementia paralytics convinced the author that the conditions found were the results of some process originating within the body. To find out the toxin, its place of origin and the productive agent, appeared to the author as the most logical field of inquiry open in the study of this disease. By careful laboratory methods, experimental and otherwise, and with the help of M'Rae Jeffrey and other bacteriologists of reputation, he succeeded in isolating a bacterium, in seventeen cases out of twenty, resembling the Klebs-Loeffler bacillus. The cultivation and the study of these organisms showed that it had a positive etiological importance in the disease. They were ready as a result of this opinion to give it the name of bacillus parlyticus, thus indicating its etiological significance. The chief result of all this work is that syphilis and alcohol become secondary factors in the causation of dementia paralytica while the toxic cause and the organism originating the toxin are relegated to the first

place. Dementia paralytica then is a disease caused by a toxin originating from a definite organism called the bacillus paralyticus. No more significant attempt to solve the problem has been made nor has any more significant paper on dementia paralytica appeared since the early ones which created for it a distinct clinical entity. Evenson,²⁵ in a very elaborate paper on the pathology of dementia paralytica presents a very careful discussion of the most recent work on the subject, in addition noting the results of his own studies. The interesting thing about his paper is the discussion of Robertson's work which has just been noted. He does not deny the invasion of the body by the diphtheroid bacillus; in fact he acknowledges that he himself has observed numerous specimens in his own work and in the laboratory of the Scottish Asylums. He adds, however, with much insight, that Robertson's theory merely complicates the problem by adding one more unknown factor. This factor is the agent or agency which causes so marked a weakening in the general resistance of the organism that such a bacterial invasion is possible. Evenson suggests that syphilis is this agent and suggests that if Robertson includes this assumption in his theory it would become much more convincing. Both of these papers represent a type of work in neuropathology which is not as commonly met with as it should, that is the work which a clinical pathologist is able to do under circumstances as favorable as is the case in the Scottish Asylums. A very interesting variation to the usual studies in neuropathology is shown by the interest that has been awakened in the study of the central nervous system found in leprosy. Kure²⁶ found in the spinal cord of a case of leprosy, hyperemia of the cord, punctate haemorrhages, edematous pia over the convexity, widened vessels and thickened vessel walls. In the peripheral nerves many lepra bacilli were demonstrated. The interesting thing about this finding is that it offers some explanation for the syringomyelic symptoms so frequently found in the nervous variety of leprosy. Stahlberg²⁷ has investigated the condition of the Gasserian ganglion in leprosy. An opportunity to study the post-mortem appearances in cases of amaurotic family idiocy are sufficiently rare to note all the cases that are published. Poynton, Parsons and Holmes²⁸ describe an interesting series of cases, the autopsy conclusions being the following: There were two post-mortem studies in the series. This is probably a primary disease of the nervous elements. That it is a primary disease of the nerve cells; the affection of the fibres are only secondary. That as the neurofibrils are relatively less altered than the interfibrillar protoplasm the affection of the latter is probably the primary change. That it is not a condition of arrested development. It seems probable that the pathology of tabes has advanced one step nearer to solution on account of some

work which Nageotte²⁹ has published on the collateral regeneration of the posterior root fibres. He studied two points, especially: 1. Moniliform state of the axis cylinders of both the anterior and posterior nerve roots, and the remarkable localization of this alteration in incipient tabes. 2. The curious phenomena of regeneration which took place in the ganglia and in the posterior roots during the whole course of tabes paralleling the destructive process of the radicular fibres. The gist of this work lies in the discovery that there goes hand in hand two kinds of nerve regeneration, one which commonly takes place at the ends of the axon and one which takes place near the nerve center itself, even reaching into the cell itself. The former he calls terminal and the latter collateral regeneration. The latter is a normal process and can be studied by means of Cajal's stain. The latter in its pathological variation is best observed in the posterior root ganglia of tabetics where it tends to supplant the root axones which have been destroyed without showing any tendency to a physiological return of function. There exists then in tabes a lesion of the root fibres which precedes their destruction; this lesion is moniliform swelling of the axis cylinder. This work seems to be of unusual importance as it points to the possibility of reaching the solution of the initial lesion in tabes dorsalis. An effort to solve this problem with positive results should be noted here. A paper by Shroeder³⁰ reports the findings in five cases of tabes. In the blood vessels and connective tissue, changes were found which are interpreted as the effect of inflammatory processes. They were more definite in fresh than in older cases. They were present in the anterior part of the cord as well as in the posterior. A rather novel view in regard to the pathology of epilepsy has been advanced by Turner³¹ based upon the study of numerous post-mortem examinations. He conceives epilepsy to be due to an undeveloped nervous system associated with a morbid condition of the blood depending upon a special tendency to intravascular clotting. The immediate cause of the fit is a sudden stasis of the blood stream resulting from the blocking of the cerebral vessels by the intravascular clots. An interesting observation in regard to the possibility of regeneration processes in the nervous system is found in a paper by Gausse³² in which a post-mortem examination is described which was done on a case which some years before had an undoubted cerebrospinal meningitis. This patient died from another disease entirely and the examination of the nervous system showed nothing at all pathological. This seems to prove beyond a doubt that there is a possibility of a perfect return to normal anatomical conditions of a nervous system which has been the subject of an acute infectious disease. This very brief review of some interesting papers in the pathology of the nervous system is

given merely to point out some few interesting research papers. It can not be accepted as even a superficial review of the work that has appeared during the year, a large number of papers of which are well worthy of being mentioned.

In reviewing the work of clinical neurology and psychiatry an effort will be made to indicate the chief lines of work rather than to give any very detailed reports. The reason for this is that there is a well recognized tendency in clinical neurology towards more careful clinical reporting. It is as though the usual problems in neuropathology have been investigated as far as they could be in the hands of the ordinarily trained pathologist. The future neuropathologist no doubt will be a specialist in pathological research and his approach to the problems will be through experimental means. Thus the greater number of men who formerly gave so much attention to the report of conventional section work on the cord and brain have now turned their attention to careful clinical study and with a corresponding degree of exactness in their methods as all methods which are based upon pathological descriptions are apt to be. Of course this tendency has been in process of growth for several years and this year sees merely an accentuation of it.

Dana³³ has an extensive article on the subject of muscular atrophy in which a plea is made for the use of a simpler classification. The key to his position is the statement that all groups of central progressive muscle atrophy not due to tumor are essentially the same disease in genesis, course and underlying pathological condition, except that we may separate the progressive occupation atrophies and certain subacute atrophies. Mills³⁴ reports another case of what is probably a unilateral ascending paralysis, though at present the case is one of crural monoplegia. This opens again the question of the existence of this new type of disease, a condition which begins as a paralysis in one extremity and shows a tendency to ascend to the arm and finally to the face. Lannois³⁵ reports a case of muscular atrophy of the aranduchenne type which was due to syphilis and which responded to antisiphilitic treatment. This is interesting because too often in cases of muscular atrophy of obscure origin the possible syphilitic origin of the condition is not thought of. From a clinical point of view there is generally to be found in a year's literature some contributions to the subject of Landry's disease. Schutze³⁶ reports a case which followed typhoid and which eventually recovered. Rolleston³⁷ has an interesting observation on the value from a diagnostic point of view of the early developing paralysis of the palate in cases of diphtheria. In a thousand cases of diphtheria, paralysis occurred in 162; in 50 of these cases the paralysis developed before the third week. To these the term "early" is applied. Some of the con-

clusions advanced from this study are that early paralysis is almost always associated with the malignant form of infection. It is more inclined to resist treatment and therefore of longer duration than the later forms of palate paralysis. An interesting form of diphtheria paralysis is reported by Hamburger³⁸ in which the left hypoglossus was involved. This was recognized by the inability to depress the left half of the tongue. The literature on tabes dorsalis has been unusually large this year. Nothing striking has been advanced with the possible exception of the newly described blood-vessel crisis in this disease. In the Lumelian lecture by Ferrier³⁹ the whole subject of tabes is well reviewed, especially the tabes-syphilis question. Mobius⁴⁰ in his annual review of tabes, in Schmidt's *Jahrbucher*, gives a complete abstract of all the newer points of this disease as brought out in the literature of the preceding year. An instructive paper on this side of the question is to be found in an article by Verger⁴¹ in which is described a case during the progress of which a chancre of syphilitic origin appeared. The idea of blood-vessel crises in tabes is due to the investigations of Pal in which he found certain very remarkable differences in the blood tension in tabetics as well as in certain other diseases associated with a certain degree of arteriosclerosis. In tabes he found, for example, that in attacks of lancinating pain the blood-pressure sank, whereas in gastric crises there was an abnormally high tension in the peripheral blood-vessels. These variations in blood-pressure Pal believes can account for the frequent cerebral symptoms observed in tabes causing epileptic attacks, vertigo, coma, etc. Morchen⁴² reports a case of this kind and calls attention to Pal's work, which he believes has not attracted attention enough. Price⁴³ makes note of a case in which very widespread sensory disturbances completely disappeared during the time that the case was under observation. If this spontaneous chorea can take place in this disease, then the reports that are sometimes published of disappearance of sensory manifestations under this or that treatment, may well be due to natural variations. During the Larredde vogue, reports of this kind were not rare. They were of course attributed to the use of enormous doses of mercury. Racue⁴⁴ reports a new sign in tabes, the analgesia of the tendo Achillis. A very instructive contribution to the tabes question is a paper by Long and Cramer⁴⁵ on the late appearance of tabetic symptoms. In fifteen cases out of forty-six studied the symptoms appeared after the fiftieth year. As possible causes of this the author brings out the fact that a late syphilitic primary affection and an arteriosclerosis are possible factors. It might be noted here that the growing value of arteriosclerosis, as an important factor in many of the nervous symptoms, before thought due to other causes, is prominently brought out in the literature of the

year just passed. Dejerine and Leenhardt⁴⁶ note the fact that a part of the symptomatology of tabes is atrophy of certain muscles or groups of muscles. They report a case in which the muscles of the back and of the abdomen were atrophic and paralyzed. Hirschberg⁴⁷ reports a case of sudden death in tabes, thus emphasizing the facts brought out by Goldflam in an article of the preceding year. The death in this case was probably not due to arteriosclerosis of which there was no sign during life, but was due to the fact that the tabetic process was located chiefly in the medulla giving rise to a group of bulbar symptoms. This point can not be too strongly emphasized, as too often the prognosis of tabes is regarded lightly. When it is remembered how often arteriosclerosis is present in this disease and how often aortic insufficiency is found, then a more guarded prognosis, both immediate and distant will be made. Lapinsky,⁴⁸ in a paper that must be looked upon as a valuable contribution to the literature of tabes dorsalis calls attention to the rarer forms of tabes in which the principal abnormal symptoms are found not in the sensory but in the motor sphere. He describes a number of such cases and adds that there are a number of cases of tabes in which the initial symptoms are in the form of paralysis or paresis of the upper extremities. In many of these cases the diagnosis can be made by the finding of various sensory symptoms at the same time. In some, however, the diagnosis is for a long time in doubt. The interesting point of such cases is the fact that although the symptoms are of themselves motor in type, their origin and cause must be looked upon as posterior root affections, the motor affects being due to the loss of sensory function, apparent or not as the case may be. By far the best paper on multiple sclerosis that has appeared during the year is by Taylor.⁴⁹ In this paper attention is called to the fact that the diagnosis of the disease is made much less often in America and papers are written upon it much less frequently than in the European literature. The author does not believe that this is so because there is less of the disease in this country but because in its earlier manifestations it is not so frequently recognized. Twelve cases are given in detail in this paper, with six very carefully worked out autopsies. This is a large material and the conclusions from the pathological point of view are worthy of attention. The following are the conclusions: The rarity of this disease in this country has been overestimated. A more careful examination of atypical cases and a more open mind in diagnosis is desirable. The importance of observing and properly estimating minor symptoms of the disease, particularly unexplained spasticity and ocular disorders must be emphasized. The etiology remains obscure. The pathological anatomy is still a hopeful field for study. Present evidence points towards a primary destruction of the myeline

with either a secondary or coincident proliferation of the neuroglia. Curshman⁷⁰ has this to say in a paper on the early diagnosis of multiple sclerosis: It is a disease due to a congenital disturbance in development, a consequence of multiple gliosis of the cord, which has a long latent period. In its early stages there are temporary eye-muscle disturbances, eye-ground pallor, pupil changes, easily produced fatigue, mild degree of sensory disturbances and a mild degree of disturbance in coördinated movements. The first part of the definition may throw light upon the frequently observed cases of this disease which are supposed to follow traumata of different kinds. Mackintosh⁵¹ gives the data on the frequency with which the early symptoms are found before the development of the so-called cardinal symptoms. He thus analyzes 110 cases from this point of view. This is a very valuable paper and an abstract can not well be given in a limited space. He, however, mentions the early and the constant appearance of subjective sensory disturbances and calls attention to the fact that these are too often interpreted as neurasthenic symptoms and the patient thus lost sight of. He concludes also that there is no ready proof that this disease has ever completely disappeared in a given case and he has records of the existence of symptoms of multiple sclerosis that have been present for more than thirty years. Two cases of the so-called acute multiple sclerosis might well be mentioned here. Marburg⁵² calls this type encephalomyelitis periaxilis scleroticans. The differential diagnosis from peripheral neuritis is mentioned. Wegelin⁵³ gives the pathological protocol of cases in which the symptoms were first noticed by the patient three weeks before she came to the hospital and the disease lasted only three or four months. In this case though the symptoms present might have left some doubt whether the case were really one of this disease, the post-mortem findings made the diagnosis certain. The differential diagnosis between this and disseminated encephalomyelitis will of course always be difficult. While the evidence of the acute inflammatory process will always determine the latter point the symptoms may be produced by one as well as the other as far as any clinical differentiation is concerned. There has been a rather unusual number of papers on syringomyelia in the literature of this year, most of them being case reports accentuating more or less rare features. Burr⁵⁴ reports a case in which the sensory symptoms temporarily disappeared, as a result the diagnosis was in some doubt, the atrophy being then explained as due to progressive muscular atrophy. At another examination the sensory disturbance returned, in its previous form. An ingenious explanation is given by the author, to the effect that the spinal cavities in this disease are filled at times with a varying amount of fluid or that the gliosis exercises at different times a varying degree

of pressure, thus accounting for the appearance and disappearance of the sensory symptoms. It is well to remember this point in the symptomatology of syringomyelia, as variability of objective symptoms has not hitherto been thought of as very frequent in the disease. A case of syringomyelia with double optic neuritis is reported by Thorington and Weisenberg.⁵⁵ Raymond and Francais⁵⁶ report an interesting case of syringomyelia with a spastic condition of the extremities and with a distribution of the sensory disturbances typically radicular in character. This distribution was somewhat similar to that found in tabes. The point that should be remembered in this case is that the distribution of the anatomical process in all cord diseases is often of more importance from a diagnostic point of view than the nature of the process. The character of the sensory changes in a case such as this is produced by the location of the lesion as well as by its nature and both these factors must be taken into account in deciding what the clinical picture means. Raymond and Guillain⁵⁷ describe a case of this disease in which the process was located in the bulb, thus producing many of the symptoms of bulbar palsy. As the spasticity in this case was very pronounced the difficulty in differentiating a case of this kind from an amyotrophic lateral sclerosis can be imagined. Such a case is a further illustration of the remark above concerning the localization of the pathological process.

Contributions on the subject of syphilis generally concern themselves with two aspects of the disease, either syphilitic lesions as such, or the relation of syphilis to tabes and dementia paralytica. On the tabes-paresis question there has appeared this year an interesting observation by Nacke⁵⁸ who made a visit to Bosnia, Dalmatia and Herzegovina to determine the frequency of these diseases in a country where syphilis is almost endemic. He found that this report was true as far as the frequency of syphilis was concerned. He found whole families suffering from syphilis in all its forms, and he found further that the methods of treatment were most insufficient. In spite of this, however, the amount of tabes and paresis was much less than in the Paris hospitals. From the data gathered during his visit, the author concludes that treatment has very little to do with the possibility of tabes or paresis developing and that there is another factor required in order for either or both diseases to result from a syphilitic infection. The nervous system must have a certain general predisposition, which possibly is of specific character before the disease in question develops. Upon this as a basis, trauma, syphilis, alcohol are the necessary direct factors. Hübner⁵⁹ contributes a very interesting set of statistics on the tabes-paresis syphilitic question. One of his interesting conclusions is that prostitutes show a much larger percentage of tabes and paresis than other women. It has long been

asserted by the opponents to the syphilitic origin of these two diseases that prostitutes, though much more syphilitic than other women, show no greater percentage in respect to the disease in question. Catola and Guinio⁶⁰ attempt to prove the assertion that syphilis can produce in the cord, lesions that are identical with those found in multiple sclerosis. They describe two cases as proof and include careful photographs of the microscopical sections. These are convincing enough to make it necessary at least to consider syphilis as a possible etiological factor, unless it be assumed that syphilis is capable of producing the group of symptoms of multiple sclerosis by an especial localization of a true syphilitic myelitic foci. Buzzard and Barnes,⁶¹ in a paper on chronic progressive double hemiplegia, have rendered a great service by showing that this disease is really a definite one and that it must not be confused with spastic paraplegia, a term which was once in very common use. Their case showed the symptoms of the disease and the post-mortem plainly demonstrated that there was a progressive degeneration of what they call the upper neuron. The etiological factor was probably an arteriosclerosis especially marked in the middle cerebral arteries and their branches. This paper throws a great deal of light upon a disease which until recently was one of the most commonly diagnosed in hospitals and clinics. With the explanation of the symptoms on the one hand by multiple sclerosis and the new observation of these two authors the outlook for further knowledge is much brighter. The literature on tumors of the brain and cord has been so large this year and the report of cases has been so frequent that the task of selecting even the more representative papers in a short review is almost impossible. Probably the most attractive paper or papers rather are from the pen of Oppenheim.⁶² In a paper published with peculiar fitness in the journal devoted to questions on the borderland of surgery and medicine he gives the history of a number of cases of spinal cord tumor. Those who are acquainted with the high standard of Oppenheim's work will not be surprised at the remarkable exactness of description which this paper shows. From a clinical point of view there is probably no better description of the symptoms of spinal cord tumors than is found here. The question of differential diagnosis so important in such cases, is entered into with great detail and the localization is worked out with admirable exactness. Oppenheim himself calls attention to the accuracy of topographical diagnosis and apparently believes that it is almost always possible in tumors situated in this region. The therapeutic results viewed from the point of view of recovery is not very satisfactory for the reason that only extramedullary tumors seem favorable operative cases. An interesting point is the sudden and unaccountable death in one of the most suc-

cessfully operated cases. The question of what Oppenheim calls bulbar shock, that is, the shock resulting from destruction of the cord during the operation, is one that should not be lost sight of in operations of this nature. In another paper Oppenheim and Borchardt⁶⁹ give an account of two successfully operated spinal cord tumors. In a third paper Oppenheim and Krause⁶⁴ describe a successful removal of an occipital tumor with the problem of localization accurately solved. He calls attention to the important fact that the prognosis of cord tumors is much better than that of cerebral tumors. It can be easily seen from these three papers that the problem of localization is no longer the crux of the tumor question, if located in the brain or cord. That, in a measure, has become more or less a routine matter on account of the numerous papers that have appeared in the last few years. After all the chief difficulty is in the early diagnosis and the chance that the tumor may be in a favorable position to be removed and that its character is not malignant, which in tumors of the cord and brain means that the tumor is more or less demarked from the surrounding tissue. Of course there are no data which can be relied upon to prognose this point in advance of the operation. Victor Horsely's⁶⁵ paper before the British Medical Society at the meeting in Toronto must be regarded as the most important paper on this subject that has as yet appeared from his pen on the surgical aspects of cerebral tumor. Bramwell,⁶⁶ in a paper on extracerebellar tumors, reports four cases of pontine angle tumors. One was operated upon with death; it was found to be a fibroma. The mortality of this variety of tumor still continues too high to regard operation as a therapeutic procedure of any great importance. Mogquin⁶⁷ reports a case of pseudo-tumor cerebri caused by an empyema of the ventricle. Of course this is not a pseudo-tumor at all, as negative findings are necessary before the case can be said to belong to this category. These are only a very few of the citations on this subject that might have been mentioned. The success in accurate localization points certainly to a more careful examination of the patient than has been the case before, because the percentage of failure in localization and in diagnosis continues to decrease. It is somewhat strange that the percentage of favorable cases however does not seem to keep pace with the accuracy from the clinical point of view. On amaurotic family idiocy there continues the interest that was present a year ago. Numerous reports of cases or groups of cases appear, so that from a clinical point of view there should be no longer any difficulty in recognizing the disease wherever it is found. Markbreit,⁶⁸ in a report of two cases, states his opinion that the typical eye findings are not essential for the diagnosis. Sterling⁶⁹ gives a resumé of the whole subject and reviews the literature as far as it has developed. The

contribution by Poynton which might be regarded as the most valuable that has appeared has been referred to in the section devoted to pathology. Spielmyer⁷⁰ reports a case of what he calls a special variety of family idiocy, that is distinct from the so-called Tay-Sachs type. The reason for his opinion is that he found a pathological picture entirely distinct from that observed in the previously published reports. He believes that the pathological appearances are the best grounds for a clinical classification in this disease. Attention was called in the review of last year to the growing importance of the role of arteriosclerosis in the causation of groups of symptoms in nervous diseases. The subject has advanced far enough to make out of the composite group of cases a definite clinical type. Collins⁷¹ in a very instructive paper gives the outline of what he calls a definite variety of cerebral arteriosclerosis. The gait is peculiar. This has not escaped the notice of previous investigators though they have failed to recognize the cause. The expression of the face is likewise typical. These cases can now be recognized by the usual clinical measures. In the post-mortem protocols, the arteriosclerosis of the cerebral vessels is most pronounced. The strange thing about these cases is that the amount of arteriosclerosis in the peripheral vessels need not be excessive. A reference to the case of double progressive hemiplegia made in this paper a few pages back, recalls the fact that Collins regards as marking a type that would naturally fall in his classification. Collins points out that the comparison of the brain in this condition with that of the sclerotic kidney is very apt. This paper of Collins' should receive wide attention for it makes plain a number of cases that before have not been very well understood. Only a very limited mention of hysteria and neurasthenia is permitted in this review on account of the lack of space. It can be said that clinical investigation in the greater neuroses continues to be as active as ever. In this year's literature the subject of hysterical fever receives a certain amount of attention that bids fair in time to solve the puzzling question of its reality or not. Goldflam⁷² reports a case. Voss⁷³ discusses the theory of the condition and a report published by Stiller⁷⁴ of a case that is not very convincing are the most noteworthy papers. There is this to be said, until other causes can be excluded in a given case, which is not at present possible, there will always be some doubt about the reasonableness of concluding that such a condition can exist purely on a hysterical basis. A new definition of hysteria is always of interest. Ziehen⁷⁵ has the following to say: Hysteria is characterized by an increased activity of the affective ideas. The affective ideas are of themselves normal. Whereas in the normal individual the influence of such affective ideas as they react upon the feeling, sensation, thinking and doing are limited by

definite laws to a relatively small or limited area; in hysterical subjects this limitation is overridden. This might be said to be as satisfactory a definition as it is possible to advance with the knowledge that we have at present on this subject.

The difficulty in giving adequate abstracts of papers on psychiatry and the lack of any definite measure of progress in this part of the review will account for the limited space that has been devoted to it. As a rule the more clinical a paper on psychiatry is the more value it has. It is very difficult to give the gist of a paper of this sort, so only a few papers will be mentioned. Hoche's⁷⁶ paper on the study of delirium produced by drugs adds very considerably to the information on the subject. The drugs which were considered in this paper were the bromides, hyoscine, morphia and various true hypnotics. Inasmuch as these are in constant use among neurological patients of various kinds the deliria produced by them must be common and ought to be recognized. The clinical descriptions given in this paper are excellent and if for no other reason the article is worthy of careful reading. Of course the material is not large enough for any general conclusions to be drawn, but the clinical type caused by them is sufficiently clear to be recognized in the future. Paton⁷⁷ has written a valuable article especially for the American reader on the care of the insane in Germany. This paper brings out clearly that in this country both the study and the interest in psychiatry have been allowed to become less important than ought to be permitted or than is consistent with development of medicine, in general. In the report of the congress of alienists and neurologists, held at Lille, Williams⁷⁸ mentions among other interesting points brought out in the discussions that the role of trauma in the causation of dementia paralytica is now largely denied among the French neurologists as it has long been denied by the Germans. In fact the other point is of more importance, that is the role of paresis in causing trauma. In a paper on dementia praecox Pascal⁷⁹ brings out the importance of causeless laughter as one of the earliest diagnostic signs of this disease. Farrar⁸⁰ describes the insanities occurring in the devolutional period of life. By this term he signifies the period just before the senile changes occur. He compares the forms seen then to those which appear in the evolutionary period of life to which dementia praecox especially belongs. The recognition of these types is important for they are of frequent occurrence and have not attracted the notice which their obvious importance demands. These psychoses are of a depressive type and often end in full recovery. Notice should be given here of a series of papers from the same pen, Farrar,⁸¹ which are called clinical demonstrations. They are excellent clinical descriptions of actual cases given in the thorough fashion that is being

required now in all clinical psychiatric work. Julius Burger⁸² has a suggestive paper on pseudomelancholy. This type is frequently met with and this paper gives an opportunity to understand and properly appreciate an abnormal state of depression which is not characteristic of true melancholia and which carries with it none of the necessary consequences of the latter disease.

The most interesting subject in therapeutics of the nervous system is by all means the work that has been done on the specific treatment of Basedow's disease by serum. The reports are numerous and in a measure confusing, chiefly for the reason that no long period has passed in order to test the value of the treatment. Rogers⁸³ describes the principles underlying the making of the specific serum which he and Beebe⁸⁴ have devised. This serum differs from all the others in the fact that it is derived from a human thyroid gland that had been removed for the disease. In this regard it is truly a specific serum which in case of human subject should be very active. Mobius' serum on the other hand, as is well known, is simply the serum from thyroidectomized sheep and its effect on the human subject is even yet problematical. The reports from the use of this and other sera continue to be favorable, and the literature that has grown up has become very large. Starnsky,⁸⁵ Tedelenberg⁸⁶ and others have published cases which show the good results of treatment which in no instance, however, are asserted to be permanent. No definite opinion can be given as yet on the value of the serum treatment in spite of two years of widely scattered trial. The most promising outlook certainly is given by the Rogers-Beebe serum which seems to be devised on more reasonable grounds than the others. The other advance in therapeutics is the newly awakened interest in the problem of psychotherapy. In this respect there have been a number of papers which deserve mention not especially because they add anything new to the subject but because they show that the efforts of the right sort of men are being directed to an examination of the data on this subject with the view of eventually developing a sound system of psychotherapy based upon a correct interpretation of the facts that are at present to be had in support of such an attempt. Putnam's,⁸⁷ Oppenheim's psychotherapeutic letters,⁸⁸ Barker's⁸⁹ paper on the isolation ward method tried at Johns Hopkins Hospital are typical papers of this kind. The advances in means of diagnosis are not especially strikingly shown in the literature of this year. There have been some papers dealing with the study of the cerebro-spinal fluid but no new points have been brought out. A certain number of new reflexes have been written about but with each new reflex discovered there arises immediately a dispute concerning the priority of discovery, and the value of the reflex is soon lost sight of. The discovery of the

spirochætæ pallida has aroused some interest in the question as to whether this might not be used in the early diagnosis of *dementia paralytica* or *tabes*. This seems a fruitless thing for its presence or absence would not even be confirmatory of these diseases but would merely mean that syphilis in one form or the other had been present.

The most notable production in neurology this year can be said without fear of argument to be the monumental work of Campbell⁹⁰ on the cerebral cortex. The purpose of this work stated in the preface is a study of the cortex cerebri in the normal state, which may be regarded as the corner stone in the histological foundation upon which the superstructure of cerebral localization may be reared by workers in other departments. The author has succeeded in studying the whole surface of the brain in a comprehensive and complete manner. This has never been accomplished before. The material is divided into three divisions: normal human, normal comparative, and pathological. No praise seems too extravagant for this piece of work. It suggests immediately an ideal that must be attained in work of this nature in others before the same recognition is accorded. Oppenheim's "Therapeutic Letters" marks an advance in psychotherapeutics that is bound to be effective. These are very carefully planned letters, sent to patients suffering from various psychical diseases in which the means in use in psychotherapy are put down in such a way that appeals to the patient at a time when he can read such letters at his leisure. The letters themselves are models of clear explanation, persuasion and essential logic which fixes Oppenheim as a psychotherapist of an advanced type. It will be interesting to see the effect of this monograph on the production of similar efforts.

Spiller and Posey's⁹¹ long expected textbook on the neurology of the eye has at last made its appearance. There are many admirable features to the book, but the chapters are of themselves uneven in merit, which is to be expected from a textbook written by so many different hands. Weigert's⁹² collected writings have now appeared and they should appeal to every neurologist as representing the work of a man who by his careful technic has made modern neuropathology possible and who has contributed what is today the most admirable paper extant on the neuroglia. This paper set a standard for careful work which has been effectual in keeping others to the same high ideal. Schultz,⁹³ on the brain and soul, is mentioned here because it is one of those admirable German monographs of a semi-popular character which is responsible for some of the interest in psychology so typical of the German investigator in almost every field of medicine.

In closing the review of the year just passed the author wishes again to call the attention of the reader to the increasing difficulty of

the task he has attempted. The mass of work has become so large that it is practically out of the question to give an adequate review of the literature of one year in a limited space. Whether this increasing amount of published work is a good thing or not it is not for him to judge. Of one thing he is certain and that is that in some parts of this work, a notable advance has been achieved and that is in the increase in the accuracy of clinical reporting. Whether this is due to continued practice or to a better conception of the art of clinical writing is not easy to say. It is, however, a pleasure to recognize this and to make note of it in the concluding words of the review for the year just passed.

BIBLIOGRAPHY.

1. Review of Psychiatry and Neurology. No. 5.
2. Beitræge zur normalen Anatomie der Ganglien Zellen. Arch. f. Psych. u. Neurologie, p. 156.
3. Die myelogenetischen Felder der Grosshirnrinde. Anatom. Anzieger, No. 11.
4. Endocellulare Netze oder durchlaufende Fibrillen in den Ganglien Zellen. Arch. f. Microsc. Anat. u. Entwick, p. 103.
5. Application de la Methode de Ramon y Cajal. Impregnation l'argent a la anatomie pathologique du cylindraxe. Rev. Neurologique 6.
6. La Rigenerazione delle fibre nervose. Communication to the med. chir. soc. at Pavia, Nov. 5, '05.
7. Recherches sur la Regenerescence autogene. Rev. Neurologique, No. 23.
8. Recherches sur la Regenerescence des Nerfs peripherique. Rev. Neurologique, 7.
9. Sopra la degenerazione e rigenerazione delle fibre nervose pereferece. Revista Sperimntale Frenetria, Vol. 37, p. 99.
10. Zur Frage der autogenen Regeneration der Nervenfasern. Neurol. Cent. 24, '05.
11. Gibt es eine autogene Regeneration der Nervenfasern. Neurol. Cent. 6.
12. Zur Frage der autogenen Regeneration der Nervenfasern. Neurol. Cent. 6.
13. Weiteres zur Frage der autogenen Regeneration der Nervenfasern. Neurol. Cent. 17.
14. The Neuroglia Framework of the Cerebellum. Journal Medical Research, Aug., '05.
15. Ueber normale und pathologische Histologie der menschlichen Neuroglia. Monat. f. Psych. u. Neurologie, 3.
16. The Afferent Nervous System from a New Aspect. Brain, No. 110, '05.
17. The Consequence of Injury to the Peripheral Nerves in Man. Brain, No. 110, '05.
18. Brain Weight. Journal of Comparative Neurology and Psychiatry, Nov., '06.
19. Studien ueber das Hirngewicht der Idioten. Monat. f. Psych. und Neurol., No. 5.
20. The Neurons. Journal American Med. Assn., No. 13-14.
21. Revision de la Question de L'Aphasie. Semaine Medicale, Mai 23.
22. Un Cas d'Aphasie Tactile. Rev. Neurologique, p. 371.
23. Considerations sur la soi-disant Aphasie Tactile. Rev. Neurologique, p. 597.
24. The Pathology of General Paralysis of the Insane. Rev. Neurology and Psychiatry, No. 2.
25. The Pathology of General Paralysis. Review Neurology and Psych., August.
26. Ueber die Veraenderungen des Rueckenmarks bei einem Leprafalle. Neurologia, V.

27. Pathologische-Anatomische Veraenderung des Gehirns bei Lepra und Leprabacillus in Gasser. *Arch. f. Psych. u. Neurologie*, 809.
28. A Contribution to the Study of Amaurotic Family Idiocy. *Brain*, No. 114.
29. Regeneration Collaterale de Fibres Nerveuses. *Nouvelle Salpetriere* No. 3.
30. Ein Beitrag zur Histopathologie der Tabes. *Centralblatt f. Nervenheilkunde*, August.
31. The Pathology of Epilepsy. *Brit. Med. Journal*, March 3.
32. La Guérison Histologique de la Meningite Cerebro-Spinale. *Rev. Neurologique*, No. 2.
33. Progressive Muscular Atrophy. A Study of the Causes and Classification, with the Report of an Autopsy. *Jour. Nerv. Ment. Dis.*, February.
34. A Case of Crural Monoplegia, Probably Representing the Early Stage of a Unilateral Ascending Paralysis Due to the Degeneration of the Pyramidal Tracts. *Jour. Nerv. Ment. Dis.*, February.
35. Atrophie Musculaire du Type Aran-Duchenne d'Origine Syphilitique. *Nouv. Icon. de la Salpetriere*, 5.
36. Acute Anosteigende Paralyse nach Typhus abd. mit Ausgang, in *Berl. klin. Woch.*, Feb., p. 201.
37. Precocious Paralysis of the Palate in Diphtheria. *Rev. Neurology and Psych.*, Sept.
38. Diphth. Laehmung des linken Hypoglossus. *Wien. klin. Woch.*, Dec. 21, '05.
39. Tabes Dorsalis. *Lumellian Lectures. Brit. Med. Jour.*, Mar. 31.
40. Neue Beobachtungen ueber die Tabes. *Schmidt's Jahrbuecher*, Heft. 1.
41. Tabes pendant L'Evolution duquel apparait un Chancre. *Rev. Neurologique*, No. 13.
42. Ein kasuistischer Beitrag zu Pal's Lehre von den Cefaesskrisen der Tabiker. *Neurol. Cent.*, No. 20.
43. A Case of Tabes Dorsalis in which Widespread Cutaneous Sensory Manifestations Completely Disappeared. *Lancet*, July 28.
44. Ueber Analgesie der Achillessehne bei Tabes. *Muench. Med. Woch.*, May 15.
45. Du Tabes Tardif. *Rev. Neurologique*, Feb. 15.
46. Atrophie et Paralysis unilaterale des muscles du dos et de l'abdomen au cors du tabes. *Rev. Neurologique*, Dec. 30, 1905.
47. Ueber den plötzlichen Tod bei Tabischen. *Neurol. Cent.* 1.
48. Einige wenig beschriebene Formen der Tabes Dorsalis. *Deutsche Zeit. f. Nervenheilkde.*, Bd. 30.
49. Multiple Sclerosis: A Contribution to Its Clinical Course and Pathological Anatomy. *Jour. Nerv. Ment. Dis.*, June.
50. Bemerkungen zur Fruehdiagnose der multiplen Sklerosis. *Med. Klinik.*, No. 36.
51. On the Frequency with which Certain Signs and Symptoms Occur in Cases of Disseminated Sclerosis before the Development of the So-Called Cardinal Signs. *Rev. Neurology a. Psych.*, September.
52. Die sogenannte Akute Multiple Sklerosis (Encephalomyelitis periaxilis scleroticans). *Jahrbucher d. Psychiatrie*, xxvii.
53. Ueber akut verlaufende Multiple Sklerose. *Deut. Zeit. f. Nervhkd.*, Bd. 31, 3-4.
54. A Note on the Temporary Disappearance of the Sensory Symptoms in Syringomyelia. *Jour. Nerv. Ment. Dis.*, Aug.
55. A Case of Syringomyelia with Double Optic Neuritis. *American Jour. Med. Science*, Dec., '05.
56. Note sur un cas de Syringomyelie avec troubles sensitifs a topographie radriculaire. *Rev. Neurologique*, No. 6.
57. Un cas de syringobulbie. Syndrome d'Avellis au cours d'une syringomyelie spasmodique. *Rev. Neurologique*, No. 2.
58. Syphilis und Dementia Paralytica in Bosnia. *Neurolog. Cent.*, No. 4.
59. Zur Tabes, Paralysis und Syphilis Frage. *Neurol. Cent.*, Mar. 16.
60. Sklerose en Plaques et Syphilis. *Nouvelle Icon. Salpetriere*, No. 4.

61. A Case of Chronic Progress. Double Hemiplegia. *Rev. Neurol. Psych.*, March.
62. Zur Symptomatologie und Therapie der sich in Umkreise des Rueckenmarks entwickelnden Neubildungen. *Mittheilungen a. d. Grenzgebieten der Med. u. Chir.*, H. 5, p. 607.
63. Ueber zwei Faelle von erfolgreich operiten Rueckenmarkgeschwuelsten. *Berl. klin. Woch.*, June 25.
64. Ein Operativ geheilter Tumor des Occipitallapens des Gehirn. *Berl. klin. Woch.*, 51.
65. On Technique of Operations on the Central Nervous System. *British Medical Journal*, Aug. 25.
66. Extra-Cerebellar Tumors. *Clinical Studies*, April 2.
67. Pseudo-Tumor Cerebral par Empyeme Ventriculaire. *Nouv. Icon. de la Salpetriere*, No. 6.
68. Faelle von Amaurotischer Idiotie. *Budapesti orvosi, ujsag.* 3.
69. Zur Kasuistick der Tay-Sachschen Krankheit. *Neurol. Cent.*, No. 2.
70. Ueber eine besondere Form von familiaerer amaurotischer Idiotie. *Neurol. Cent.*, No. 2.
71. A Definite Clinical Variety of Cerebral Arterio-Sclerosis. *Jour. Nerv. Ment. Dis.*, December.
72. Ein Fall on Hysterischem Fieber. *Neurol. Cent.*, November.
73. Zur Lehre von hysteriachen Fieber. *Deut. Zeit. f. Nervenhek.*, Bd. 30.
74. Gibt es ein hysteriaches Fieber? *Orvosi Hetilap.*, No. i.
75. Die Deutsche Klinik. am Eingang des 20. Jahrhunderts.
76. A Study of Some Cases of Delirium Produced by Drugs. *Rev. Neurology and Psych.*, No. 2.
77. The Care of the Insane and the Study of Psychiatry in Germany. *Jour. Nerv. Ment. Dis.*, No. 4.
78. Report of the Congress of Alienists and Neurologists of French-Speaking Countries. *Rev. Neurology*, December.
79. *Ibidem.*
80. Types of the Devolotional Psychoses. *Rev. Neurology*, October.
81. Clinical Demonstrations. *Americ. Journal of Insanity.*
82. Clinical Pseudo-Melancholie. *Cent. f. Nerv. u. Psych.*, March 15.
83. Treatment of Exophthalmic Goiter by a Specific Serum. *Jour. o. Americ. Med. Assn.*, Feb. 17.
84. Preparation of a Serum for Exophthalmic Goitre. *Ibidem.*
85. Zur Antithyroidin Behandlungen der Basedow Krankheit. *Wien. Med. Presse*, March 11.
86. Ein Fall von Morbus Basedowii. *Schandelt mit Antithyroidin.*
87. *Boston Medical and Surgical Journal.*
88. *Psychotherapeutische Briefe.*
89. *Jour. Am. Med. Scienc.*, Sept.
90. *Histological Studies on the Localization of Cerebral Functions.*
91. *Neurology of the Eye.*
92. *Gesammelte Abhandlungen Karl Weigert's.*
93. *Gehirn und Seele.*

LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OF

WILLIAM E. SAUER, M. D.

During the past year there have been no striking advances in laryngology and otology, but there has been considerable activity shown along all lines. The subject that has received more attention than any other, especially in this country and in England, is the correction of septal deformities. In Germany, the submucous resection operation has superseded all others. There are still some authors who hold that the submucous resection of the septum is not to be employed in all cases. Among these are Price Brown,¹ who is inclined to believe that the removal of so much cartilage and bone is contrary to the generally accepted views on surgery, namely: To replace and not to excise normal tissue. He also fears that this weakened membranous septum will not withstand the aridity of such fevers as those of the pneumonias and the typhoids. As a result there will be a much larger percentage of perforations among the people during future years. The author describes a new straightening operation, which he calls the "H" operation; in reality it is only a modified Ash operation. He reports one successful case. Sluder² believes there is still a need for an operation suited to the condition existing in children, one that can be performed quickly and easily with the least interference with the integrity to the septum. He believes, as does Carter,³ that the septum plays an important part in the growth and development of the nose, and should not be removed during the years of most active growth. Sluder's method of procedure consists of making three parallel incisions through the septum, the central one being at the apex of the convexity, extending the full length of the deformity. The other incisions are made at the point where the deflected portion joins the straight portion. The parts are then placed in position and held in place as in the Ash operation. This method has been employed in twenty-four cases, and a satisfactory result has been obtained in all. Winslow⁴ believes that there is a reaction in favor of the older operations, and that, in some cases, better results can be obtained by the old than by the new. He admits, however, that the submucous operation is indispensable. Roe⁵ believes that there is considerable danger of a flattening of the nose taking place from the removal of the septum. He also believes that this operation should not be done on children. McDonough⁶ states that the patient should not be deprived of the support given by the septum, if a less severe operation will suffice, and insists that no more bone or cartilage than is absolutely necessary should be removed. Among the

most enthusiastic advocates of the submucous operation are Freer,⁷ Ballenger,⁸ Beck,⁹ Carter,¹⁰ Yankauer,¹¹ McCoy,¹² Thompson¹³ and many others. Freer, Thompson and Beck believe that this operation is suitable for all forms of deviations. Freer feels no hesitancy about doing this operation on children. Beck gives the following reasons for always choosing to do the submucous method in preference to all others: 1. The operation can be done in almost every instance under local anesthesia with comparatively little pain, shock or discomfort to the patient. 2. Hemorrhage, subsequent to the operation, is usually very slight. 3. The after-treatment is very simple and not annoying to the patient, and shortened by many weeks. 4. Only one side of the nose is attacked, and the patient breathes freely through the other nostril while the other side is healing. 5. The results are obtained with the destruction of a very slight area of functioning mucous membrane; and cicatrices and crust formations are not present in the same degree as in other methods of procedure. There have been a number of instruments devised which greatly simplify the technique of the operation, notably those by Beck, Ballinger and McCoy.

The diseases of the accessory sinuses have not received as much attention as in the past. This can probably be accounted for from the fact that the pathology and the treatment are better understood. There are, however, still some phases of the subject which have received considerable discussion. The employment of the X-ray in sinus diseases as an aid in diagnosis has been studied by Coakley.¹⁴ He is convinced that a good skiagraph can be depended upon to demonstrate not only the size of the accessory sinuses of the nose, but the presence or absence of disease as well. The presence or absence of the frontal sinuses can be demonstrated with certainty before operation; its size can be accurately determined, as well as the location of the septum between the sinuses. The width of the ethmoidal region can also be determined. Mosher¹⁵ also found that the size and shape of the sinuses can be determined by the x-ray. In three of his cases he was able to determine the presence of pus; this was substantiated by the operative findings. Menzel¹⁶ has proven by his experiments that there is no danger of any fluid entering the ethmoid or frontal sinus while irrigating the antrum. The suction method of Sondermann and Spiess, in the diagnosis and treatment of sinus affections, is advocated by Brawley,¹⁷ who finds this method to be of some value in certain cases. As for the treatment of the chronic suppurations of the maxillary sinuses, the consensus of opinion seems to favor the intranasal route, of opening and draining the sinuses. The present status of this question has been ably discussed by Tilley.¹⁸ The radical operation of Denker¹⁹ has been warmly supported by Stolte.¹⁹

The operations of Killian and Coakley are still the favored ones for the frontal sinuses. The indications for the surgical opening of the frontal sinuses are given by Hajek.²⁰ He claims that this operation is done more frequently than necessary. He believes that the endo-nasal treatment is too often neglected. Hajek had done this operation only twenty-three times in twelve years; as compared to Mermod, who had operated on one hundred and sixty-five cases. The sinuses should be opened without delay when there are cerebral complications present. When the headache and nasal discharge persist in spite of endo-nasal treatment. If only a discharge of pus remains one must individualize whether or not, the sinuses should be opened. Hajek²¹ has studied the mode of infection in a case in which death followed an operation on the ethmoid. He found that the infection had taken place by way of the blood vessels. Streptococci were found in the swollen mucous membrane and blood vessels of the ethmoid, which communicate with those of the dura; the bone was found to be intact. Delneuve²² reports a case of marked disturbance in vision with central scotoma for colors, in which a return to the normal was affected by the treatment of the suppuration in the sphenoidal cavity. This case illustrates the importance of the nasal examination in such cases. Fischer²³ finds that obscure ocular lesions are sometimes the evidence of an affection of the cavity surrounding the eyes, even when there are no classical symptoms of sinusitis. Wheelock²⁴ reports a case of pneumococcus infection of the antrum, which was followed by rheumatic symptoms in the knee, shoulder and elbow joints. These symptoms rapidly subsided after the antrum had been opened and drained.

The serum treatment of hay fever has not been as encouraging as we had hoped. Cohn²⁵ found its effects to be positive in from 30 to 50 per cent of the cases. In his hands it has not been more than a palliative, however. Cohn has found a tablet containing 1-20 grain suprarenalin, with a small amount of sugar of milk, to be effective when allowed to dissolve on the back of the tongue. This dose may be repeated in ten minutes, or in two hours, as necessary; sometimes one dose will suffice for the day. Somer's²⁶ experience with the antitoxin during the past three years has led to the following conclusions: 1. The antitoxin produces prompt and positive amelioration of the symptoms of hay fever in a large majority of cases. 2. In a small number this is accompanied with a complete disappearance for that particular season. 3. Where slight or no action is seen, it is due to improper administration; while in a very small number some idiosyncrasy is undoubtedly active. 4. When results are obtained it favorably influences all manifestations of hay fever, in the larger number of cases; while in the smaller class, one or more of the symptoms

seem to be markedly influenced. 5. When given during the attack of hay fever irrespective of its severity, it produces palliation rather than cure. 6. When successfully used during one season, it does not prevent the reappearance of the disease the following season, although there is reason to believe that a slight influence in modifying other attacks does exist. 7. The antitoxin is effective in both powder and liquid form; but the latter is preferable, as it is staple, does not require a preservative, and is more convenient for the patient. Zarniko²⁷ analyzed the reports received from patients at the Institute of Hygiene at Hamburg, who had been treated by pollantine. During the past year there had been 492 responses to the questions which were sent out with each tube of the pollantine. Zarniko classified these under three headings; 1st. Those in which a satisfactory result was obtained; 2nd, those in which partial relief was obtained; 3rd, those in which no effect was noticed. Of the European cases, 189, or 66 per cent, came under the first class; 78, or 27 per cent, under the second; and 20, or 7 per cent, under the third class. Of the 205 American cases, 113, or 55 1-10 per cent, were in the first class; 35, or 17 per cent, in the second, and 57, or 27 per cent, in the third class. Summing up these cases, a total of 61 3-10 per cent, in which a satisfactory result was obtained; 23 1-10 per cent, in which partial relief was obtained, and 15 1-10 per cent as failures; some of the failures are attributed to a faulty diagnosis. Renault²⁸ describes a new method of treating hay fever. He considers spasmodic coryza to have an arthritic basis. In fourteen cases he adopted the suggestion of Brindle, and had made interstitial injections under the nasal mucous membrane; in all the cases it had brought about complete cessation of the symptoms. In this affection, according to Brindle, there is excessive vasodilatation of the erectile tissue of the pituitary membrane, with more or less edema. The hydrorrhea is regarded as a glandular hypersecretion, but is really an escape of the serum through the meshes of the congested mucosa. It is this view of the pathology that has led Brindle to institute his treatment. He sought by the injection of paraffin to interpose a mechanical obstacle; the blood being thus retarded enters the vessel under lower pressure than before, and in smaller quantity. In consequence, the osmosis and the hydrorrhea disappear. This ingenious procedure is indicated, according to Renault, only when the nasal mucous membrane is still retractile. It is contra-indicated when there is a degeneration and hypertrophy of the mucosa, and when certain lesions are present in the nasal chambers, such as spurs and polypi, which, through reflex action, may thus explain the recurrence of the attacks of spasmodic coryza. Schadle²⁹ reports three cases of hay fever successfully treated by washing the antrum with warm boric acid solution until the fluid came away perfectly clear

and free from sediment. The sinus was then insufflated with thymol iodide. This form of treatment was continued for several days; complete relief was obtained after the third treatment. The author believes these cases illustrate the intimate relationship existing between a morbid state of the maxillary sinuses, and a local general phenomena of hay fever. The antral theory (which was first advanced by Fink, of Hamburg, several years ago) embodying these factors, is that the antrum of Highmore provides the secretion which forms the agent that causes the local irritation in the sinuses and nasal passages alike. Fink³⁰ formerly employed aristol, but now employs thymol-iodide. Boesser³¹ has modified Helmholtz's method of local application of quinin for hay fever by mixing caffen with the quinin and instilling it into the eye instead of the nose. Two parts of quinin and one part of caffen are mixed together, and a one per cent solution made of this mixture. A few drops of this solution are instilled into the eye at the first typical itching in the inner angle. He says that with the exception of the maxillary sinus, this disinfects all the parts where the hay fever reflex symptoms are generated. The effect of the instillation lasts about six hours or more. Wollner³² reports a case of hay fever cured by cold applications to the forehead and face. Relief was obtained in three-quarters of an hour; the treatment was kept up for three hours. There was no recurrence of the attack during the season; another attack was relieved a year later by the same treatment.

The etiology of ozena is discussed by Broeckhaert,³³ who considers ozena as a special chronic inflammation of the pituitary membrane; particularly of the inferior turbinate, ending at length in diffuse sclerosis of the mucous membrane. The most important changes are the horny degeneration of the superficial epithelium and degenerative changes in the glands. In consequence of the changes in the vessels, nutritive troubles take place which affect the mucous membrane, the bone, and the periosteum. The lesions are less marked in the ethmoid, which become affected with atrophy in advanced cases. Histologically, the mucosa affected with the ozena shows that there is chronic toxic infection, although, in the author's views, neither tubercle nor syphilis can be considered as direct causative factors; he thinks that para-syphilis and para-tuberculosis may produce the disease when certain pre-disposing causes exist, such as platyrrhinie. This theory explains why so many ozenatous patients become tuberculous. Guiez³⁴ reports twenty-two cases of ozena treated by injections of paraffin in the submucosa; he obtained a complete cure in seventeen cases. His method of procedure was to inject only one cc. at a time, and repeat at the end of six days. All other local treatment was stopped, with the exception of introducing a little sterilized petrolatum into each

nostril. Navaratil³⁵ reports five successful cases treated by this method. The case reported by Silberstein,³⁶ in which the injection of 4-1-2 ccm. of hard paraffin with a melting point of 43 C. for the correction of a saddle nose, resulted in a thrombosis of the ophthalmic vein and blindness, shows that even the injection of hard paraffin should never be undertaken unless there is some urgent indication. Freer has obtained such satisfactory results in the treatment of ozena by irrigation and Gottstein tampon, followed by application of an ointment of lanolin, vaseline, and 2 per cent salicylic acid, that he considers paraffin injections unnecessary.

The bacteriology of a common cold has been studied by Benham.³⁷ The results of his examination in twenty-seven cases showed that diphtheroid organisms were found to be present in twenty cases out of twenty-one, that is, ninety-five per cent. He was able to isolate them in five cases. Cocci negative to Gram's stain were seen in ten out of the twenty-one cases, that is, 67 per cent; some of these were pneumococci. They were not present in large numbers in any of the cases. Pfeiffer's bacillus was found in only two of the cases. Other organisms similar to those found in the normal nose, were found in small numbers.

The galvano-cautery as an agent in the treatment of hypertrophic and intumescent rhinitis, had been practically discarded by many; during the past two years there has been a reaction in its favor. Ingalls³⁸ and Friedberg studied 100 cases of intumescent and hypertrophic rhinitis. They concluded that the galvano-cautery when properly used, offers one of the best, if not the best method for the treatment of these affections. They believe the danger of middle ear affections has been greatly exaggerated; only one among several thousand have come under their observation. The tendency to the formation of adhesions is not great if the septum is not injured. The objection that the galvano-cautery destroys too much of the mucous membrane does not obtain if the cauterizations are linear. In this form of treatment scab and crust-formation does not occur any oftener than after other nasal operations. Freer³⁹ is also an advocate of linear cauterization in these cases. In order to obtain the desired result, a single linear cauterization along the entire length of the turbinate down to the bone is necessary.

Richardson's⁴⁰ study of septal perforations in which there was no known etiological factor and an indefinite pathological history, show that tuberculosis was more or less in evidence in sixty-six per cent, either in this direct physical evidence or the family history. He believes this to be more than a pathologic coincidence. Goldstein⁴¹ has applied the submucous resection principle in the treatment of septal perforations in those cases in which the mucous membrane has not

covered the bone or cartilage, and there is much crusting. Enough of the cartilage or bone is removed, so as to allow the edges of the mucous membrane to come in contact, resulting in a perforation whose margin is covered by mucous membrane. All crust formation ceases.

In the proceedings of the Laryngological Society, of London, there has been considerable discussion as to the permanency of the paraffin deposits deposited for the correction of nasal deformities. Some of the cases which at first seemed very promising, showed a return of the deformity. Downie⁴² does not believe that the paraffin becomes absorbed. He has found no changes in the cases in which injections had been made four years ago. He employs a paraffin with a melting point of 106 to 108 F. He has operated on 140 cases with a satisfactory result in most of them.

Alypin, as a local anaesthetic in rhinologic practice, has been employed by Finder.⁴³ He has used it extensively in 20 per cent solution, and in no case did he have any disagreeable symptoms. Phillips⁴⁴ has also employed alypin and finds that it has the power of producing local anaesthesia, without producing any systemic effects.

The intimate relationship which exists between many affections of the eye, and the condition of the nasal cavity has been brought out by Baumgarten.⁴⁵ These had been studied chiefly in chronic cases in which necrosis of the bone had given rise to some lesion in the orbit. The following cases have been reported by the author, namely, unilateral protrusion of the eye ball, with an edema of both sides, following a serous ethmoiditis. Edema of the eye associated with ulceration of the nasal septum. Paralysis of the internal rectus and the inferior oblique associated with sphenoidal sinusitis. Orbital and supra-orbital neuralgia, caused by a purulent inflammation of the bulla ethmoidalis. Protrusion of the eye ball associated with a serous sphenoidal sinusitis.

Headache of nasal origin is described by Lack⁴⁶ as a dull aching sensation, or as a sharp and stabbing pain, or as a feeling of heavy pressure. It may be located at the frontal region to the vertex or to the back of the head; it may radiate all over the head, even true hemicrania may be met with. There is often no characteristic feature indicating its nasal origin. Generally the pain in the head associated with nasal disease is more circumscribed and continuous than headache due to other causes. It often seems to start from, or radiate into the nose, and is often neuralgic in character. The following nasal conditions are given as causes of more or less distinguishable forms of headache: 1. Headache resulting from nasal obstruction; this being especially common in children suffering from adenoids, and in adults with nasal polypi or hypertrophic rhinitis. In adults, headache is more common in diseases of the ethmoidal region, than in

disease of any other part. The pain in this condition is usually of a dull aching character, occurring chiefly on waking from sleep, and wears off during the day. 2. Referred pain from nasal pressure; a typical example of this form of headache is that due to an enlargement of the middle turbinate. The pain is referred chiefly to the supra-orbital region of the same side, whence it may radiate down the nose into the eyes and across to the opposite side. When very severe it is accompanied by pain on pressure over the supra-orbital region, and over the nasal bone. This pain is often associated with suppuration in the frontal sinus, ethmoid, or antrum, but occurs independently and generally disappears when the anterior end of the middle turbinate is removed. The periodicity of this pain is due to an intermittent swelling of the mucous membrane covering the bone. Large spurs or deviations of the septum pressing on the turbinates, are frequent causes of headache. 3. Headache resulting from acute or chronic inflammatory conditions of the accessory sinuses; these headaches are usually periodical. The pain commences in the morning and gradually increases for two or three hours. When most intense, discharge begins to flow from the nose, and the pain slowly subsides. When due to disease of the frontal sinus, the pain is usually most intense on top of the head towards the front part frontal bone; there may also be pain over the frontal region, radiating into the eyes. When intense, the pain is accompanied by superficial tenderness over the posterior part of the frontal bone, and over the innermost part of the orbit. Pain due to disease of the sphenoidal sinuses is readily referred to the back of the head, radiating down the back of the neck. Pain due to ethmoidal disease may be referred to the frontal region, or situated behind the eyes. Pain due to an antrum suppuration is more often situated over the malar bone. All these forms of headache may be accompanied by pain in the supra-orbital region, due to an associated enlargement of the middle turbinate. Smurthwait⁴⁷ finds that headache is frequently met with in those cases where the middle turbinate is tightly wedged against the septum. The removal of the anterior end of the turbinate by relieving this pressure, causes the headache to disappear. Somers⁴⁸ also finds nasal disease and neuralgia frequently associated. Aside from sinus affections, hypertrophy of the turbinates, and especially the middle, is the most frequent cause.

A new route for operating on malignant nasal tumors is described by Denker.⁴⁹ His method consists of making an extensive incision along the junction of the upper lip with the alveolus. The soft parts are dissected in the same manner as in the radical operation on the maxillary antrum. The antrum is then opened and enough of the antro-nasal wall is removed to expose the growth. After the removal

of the growth, the cheek is allowed to drop into place, and the incision is closed; all after-treatment is carried out through the nose. Three cases are described in which this plan was followed.

According to Myer⁶⁰ there are two ways in which conditions in the nose may affect the lachrymal apparatus: 1. Through reflex action which results in an increase of the secretions. 2. Conditions mechanically obstructing the lachrymal canal, the latter being the most important. The author has found as a frequent cause of epiphora a peculiar form of the inferior turbinate. The lower border was turned outward and upward, lying against the nasal wall at the insertion of the turbinate. As the opening of the lachrymal canal is just beneath the insertion of the turbinate, the slightest swelling of the turbinate will close the opening. In dealing with such cases, the author removes a portion of the turbinate if the passages are narrow; if they are normal or atrophic, he fractures the inferior turbinate at its insertion, by grasping it with a suitable forcep and turning it upward and inward. The turbinate is then held in proper position by gauze tampons. In the six cases operated upon the epiphora had disappeared in from eight to fourteen days.

Killian⁶¹ reports the results of his observations in twenty-two cases of choanal polypi. He believes they have their origin in the cavity of the maxillary antrum. In one case he saw the pedicle projecting out of an accessory opening.

Adenoids have received their usual attention. The question of anesthesia in adenoid operations has been discussed by Cline.⁶² He believes that as clean and thorough an operation can be done with a local as with a general anesthetic. Sprague⁶³ reports his observations in one thousand adenoid operations; ether was employed in all but two cases. He prefers this to any other anæsthetic. He considers chloroform as especially dangerous in adenoid cases, as they belong to that class of cases known as *habitus lymphaticus*, in which chloroform is contra-indicated, and in which most deaths from chloroform have occurred. The removal of adenoid vegetations through the nasal passages by a new method, is described by Freer,⁶⁴ who has devised a slender forceps with a smooth rounded beak. It is of the general model originally devised by Ingalls for the removal of bone in the nose. With this instrument the author operates through the nasal fossae. The question of post-operative hemorrhage following the removal of the pharyngeal tonsil, according to Dupuy,⁶⁵ has not been accorded the consideration it deserves by the writers of text books. Dupuy was able to find reports of thirty-eight cases of alarming hemorrhage following adenectomy, eleven of which were fatal. Compared to the great number of adenectomies, the fatal results appear to be few; this is believed to be due to a failure of reporting the fatal cases.

A case of sarcoma of the naso-pharynx treated by injections of adrenalin, in which encouraging results were obtained, is reported by Rhodes;⁵⁴ he followed the method first suggested by Mahu in 1903. It consists in injecting 5 to 10 minims of the following into the substance of the tumor; Adrenalin chloride, 0.12 gramme; boric acid, 0.16 gramme; chloretone, 0.025 gramme; distilled water, 15 gramme; these injections were made each day, selecting a different portion of the tumor each time. The encouraging results of the treatment in the author's case were the immediate reduction in the size of the sarcomatous mass, and the temporary alleviation of pain; though the patient died from exhaustion due to the inroads of the disease.

Some of the points bearing on the surgical anatomy and the physiology of the tonsil are discussed by Wilson.⁵⁷ The tonsil is well developed at the end of the first year, but apparently does not reach maturity until the fifth year. Its activity has been demonstrated at the end of fetal life, not only by the development of lymphocytes in the follicles, but by the infiltration of leucocytes in the over-lying epithelium. The tonsil is enveloped in a capsule of connective tissue, which is normally one mm. thick. Wilson believes the principal blood supply in man comes from the facial, either through a distinct tonsillar branch or the ascending palatine branch of the facial. The hemorrhage which occurs at times in tonsillar operations is due to an injury to the branches of the lingual and superior palatine artery. The germ centers of the follicles contain many cells undergoing mitotic division. From these follicles the lymphocytes may pass directly into the lymph system, or through the mucous membrane into the mouth. As far as our present knowledge goes, the first do not appear to differ in any way from those secreted by the follicular glands; as for the latter we have no definite knowledge, as it may be more of an excretion than a secretion. The tonsil, as a portal of microbic invasion, is discussed by Jacobi.⁵⁸ He believes that a surface lesion must always exist. When a living germ or toxine is to find access, and even that when tonsils, or what is more common, a single follicle becomes inflamed, the very venous obstruction will exert a bactericidal influence of the stagnating blood serum. Goodale⁵⁹ takes the opposite view. He states that in infectious arthritis evidence has accumulated to show that the tonsil forms a frequent portal of entry. The tonsil may be of normal size, and show nothing on clinical examination; after excision it will always give signs of lacunar retention. The diseased faucial tonsil as a causal factor in respiratory and gastric diseases is discussed by Solenberger.⁶⁰ He believes that the pathological conditions associated with the submerged tonsils are too frequently overlooked. The caseous exudates secreted by the crypts accumulate in

the supra-tonsillar fossa, and are undoubtedly swallowed during eating. The accumulated secretions besides being irritant, form excellent culture media for the cultivation of pathogenic organisms. There are frequent attacks of acute inflammation which spread to the surrounding tissues. He makes an earnest plea for the radical removal of such tonsils. The indications for surgical interference, in disease of the faucial tonsils and the methods of choice in operating, with an analysis of 480 cases is given by Cassilberry.⁶¹ This analysis shows that endocarditis, nephritis, and arthritis follow infections of the tonsils. He is also inclined to believe that infection of tuberculosis may take place through the tonsils, to the cervical glands, then through the entire system. He regards a persistent cervical adenitis as an indication for a tonsillectomy. He has never found any ultimate harm result from the operation; nothing but good.

Davis⁶² offers a new procedure in the treatment of Ludwig's angina, or septic infection of the throat and neck. It consists of making an incision in the median line between the symphysis and the hyoid bone, and carried through all the tissues into the mouth; there is hemorrhage from the incision when made early, and drainage will be sufficient. A case in which death resulted from a suppurating tonsil is reported by Kenerson.⁶³ The abscess had been repeatedly opened and tracheotomy had been performed, but an edema had appeared which spread over both sides of the neck and down to the clavicles, resulting in death on the eleventh day. Melzi⁶⁴ reports a number of cases of peritonsillitis aborted by the administration of brewer's yeast, 8 to 20 g. in twenty-four hours.

The value of a throat examination in calling attention to the presence of unsuspected pulmonary tuberculosis, is pointed out by Harland.⁶⁵ In many cases of tuberculosis of the lungs, the disease is often accompanied by considerable wasting of the mucous membrane of the upper air tract, with changes of the quality of the secretions. The symptoms associated with these changes in the nose and throat, are suggestive, namely: Constantly recurring colds; continued dropping of mucus from the nasal pharynx into the throat; hoarseness and coughing. The mucous membrane is often found wasted and bathed with sero-mucus. There is often a persistent sub-acute pharyngitis; such symptoms and appearances should lead to inquiry for other signs of the disease. The medical treatment, the climatic treatment, and the surgical treatment of tuberculosis of the upper air tract are discussed by Bane, Freudenthal and Levy.⁶⁶ Bane divides the medical treatment into constitutional and local. Under the former he considers forced feeding, rest, guaiacol, and creosote as the best aids; he considers formalin the most efficient local remedy. Freudenthal emphasizes the necessity of giving tuberculous patients the benefit of cli-

matic treatment. He lays great stress on the value of sunlight; he also considers high altitudes of paramount importance in certain cases. Levy states that deep incisions are valuable in laryngeal tuberculosis, when there is uniform infiltration, or in edema. The influence of these incisions are increased by rubbing in lactic acid. Excision of tuberculous masses should be limited to those cases in which there is a certainty of complete removal of the entire focus of the disease. The extent of the involvement is often greater than can be determined by the laryngoscopic or microscopic examination. Curettement is valuable in ulcerations and soft excrescences, the character of the ulceration, modifying, however, its applicability. The galvano-cautery is useful in small, easily accessible tuberculous ulcerations. Tracheotomy may prove of value in children, and is always indicated for the relief of dyspnea. Laryngectomy is probably never indicated. The indications for a curative tracheotomy in tuberculosis of the larynx as given by Henrici⁶⁷ are: 1. The operation should be done only in cases under twenty years. 2. The lungs should be free or only slightly involved. 3. The process in the larynx should be of a benign character. The treatment of laryngeal tuberculosis by silver fluoid in a 1 per cent solution, is advocated by Megnon.⁶⁸ He has employed this remedy for two years in a number of cases, with good results.

The advantages of the direct endo-laryngeal method of removing laryngeal-papillomata in children are given by Patterson.⁶⁹ The instruments required are a fish-tail tube spatula and a straight forceps. The Kierstein lamp is used to illuminate the larynx. The patient is placed on the back with the head hanging over the edge of the table. Chloroform is used as an anesthetic and cocaine is used locally. The forceps are introduced through the tube, and the growths are rapidly removed. This method has given the author good results. Should recurrence take place, he advises a treacheotomy, as a more thorough removal of the growth can be made. Kroellreutter⁷⁰ reports a case of laryngeal-papilloma in which good results followed the administration of Fowler's solution. In another case he obtained good results following the persistent use of potassium iodide.

Jackson⁷¹ regards the prognosis of a laryngeal cancer in which an early thyrotomy has been done, to be better than that of a chronic laryngitis. If the condition is observed late, a total or partial laryngectomy will probably prolong life for a variable period, but recurrence is fairly certain. He states that the early and curable stages of laryngeal cancer are characterized by nothing but hoarseness, which may disappear or recur. Cough, pain, glandular enlargement, emaciation, cachexia are present only after the curable stage is passed. MacKenzie⁷² makes an appeal for the naked eye diagnosis

of magignant tumors of the larynx. Every resource and refinement of clinical diagnosis including the exclusion of lues by the iodides, and tuberculosis by tuberculin, should be resorted to before the microscope is resorted to. The objections which he makes to the indiscriminate removal of tissue for examination are: 1. It subjects the patient to the dangers of auto-infection at the point of incision, and to metastasis elsewhere. 2. It stimulates the local growth of the cancer. 3. The method is often inconclusive, misleading, and sometimes practically impossible. Delevan⁷³ states that results of thyrotomy with the removal of the diseased soft parts are estimated at 44 per cent, and quotes Butlin, who found that 70 per cent of his cases had lived more than three years. The statistics of laryngectomy show that only 15 or 16 per cent have remained alive more than three years.

The direct methods of examination of trachea, bronchus and esophagus have received considerable attention. Killian⁷⁴ reports the removal of a collar button from the left upper bronchus in a boy of twelve, and a piece of bone from the right bronchus in a man of twenty-four. Von Schroeter⁷⁵ reports a case of carcinoma of the lung in which the tumor was not only seen through the bronchoscope, but a portion was removed for microscopic examination. He also reports that L. Von Schroeter has employed a new method of illumination which far excels the present methods. Stillman⁷⁶ reports the removal of an open safety pin from the esophagus, by means of a long forceps through the esophagoscope. The pin was found to be located at 25 cm. from the upper incisors; the point of the pin was upward as shown by the X-ray. The patient noticed no ill effects. He makes a plea for this method in preference to the cutting operations, which show such a high mortality. Henrici⁷⁷ reports the removal of a bone from the bronchus. Von Schroeter⁷⁸ reports a case in which a syphilitic gumma at the bifurcation, was diagnosed by means of the bronchoscope.

The relation of the blood supply of the inner ear has been studied by Shambaugh.⁷⁹ He finds that the cochlear division of the internal auditory artery branches in a fan-like form with festooned junctions between the radii. In the terminal coil of the cochlea, there is a terminal artery. The possibility of the vestibular apparatus being damaged apart from the cochlea, and vice versa, is therefore evident, but not likely to occur in cases of hemorrhage. The main exit for the blood is through the vein of the aqueducts cochlea. His observations confirm those of Alexander and Politzer, that there is a communication between the blood vessels of the middle and internal ear; hence the tinnitus in otosclerosis of the middle ear, and the tendency to the involvement of the labyrinth in catarrhal, as well as in suppurative processes of the tympanum. The aims and limita-

tions of intra-nasal surgery in the treatment of chronic non-suppurative affections of the middle ear, have been discussed by Harris,⁸⁰ who concludes as follows: 1. The nose plays an important role as a causative factor in many cases of otitis media; but by no means in all such cases. 2. That the lesion in the nose is usually of an obstructive nature, acting as an obstacle to proper ventilation of the middle ear. 3. That in beginning cases of hypertrophic otitis media, a certain amount of improvement can be confidently expected by restoring proper ventilation of the cavity through measures addressed to the nose, with the aim of relieving naso-pharyngeal and tubal inflammation; but that (a) as yet only such cases of disease call for nasal treatment as show pathological changes in the throat; these demanding attention apart from the condition of the ear; (b) that it is important to determine the true nature of the process in the middle ear, as the sclerotic or so-called hyperplastic form is not influenced at all by such treatment; and (c) that adhesive changes and ankyloses cannot be expected to yield, however completely the nasal obstruction is removed. 4. That an important result to be secured by treatment, is the relief afforded from the repeated attacks of rhinitis, which by their effects on the eustachian tube are wont to aggravate the chronic condition. 5. That tinnitus aurium and vertigo are at times benefitted by nasal treatment. 6. And finally, that because of the importance of treatment to the nose and throat, a closer association of otology and rhinology is urgently demanded.

Grandenigo⁸¹ believes that the occurrence of a painful fluctuating swelling on top of the head near the middle line, extending to the foramina emissaria Santorini, in the posterior part of the sagittal suture, to be characteristic of the thrombosis of the longitudinal sinus. An operative measure for thrombosis of the cavernous sinus is proposed by Langworthy.⁸² His method consists of elongating the usual frontal sinus incision downward along the nasal bone, and retracting the eye out of the field; the nasal wall of the orbit is removed over a considerable area, together with the nasal bone on that side. The entire structures of the nasal fossa are then removed. This at once exposes the anterior surface of the body of the sphenoid with the opening of the sphenoid cavity. The anterior wall of the sphenoid sinus is next removed, as well as the external or lateral wall, against which rests the cavernous sinus. From this point the sinus is opened with a knife and a blunt dissector. If unsuccessful in opening the sinus, the external wound is closed, and according to Langworthy, the eye remains uninjured, and nothing is lost by the attempt.

Twenty cases are reported by Neumann,⁸³ in which he had performed the acute and radical mastoid operations under local anesthe-

sia. His method of procedure is as follows: The patient is given a full meal, as it has been found that the danger of a cocaine intoxication is greatly lessened after a full meal. The field of operation is prepared in the usual way, and a solution consisting of 5 cm. of a 1 per cent solution of cocaine, 12 drops of adrenalin, and 3 cm. of normal salt solution is injected under the periosteum at several points over the mastoid. The author has devised a special syringe with a strong needle. These injections are easily made over all portions of the mastoid, excepting the tip where the periosteum is very adherent, but even these portions can be made anaesthetic. The important point is to anaesthetize the anterior surface of the mastoid; this is done by inserting the needle just at the posterior insertion of the auricle, parallel to the posterior wall of the auditory canal. At the end of ten minutes the operation can be done. For the radical operation from 7 to 8 cm. and a 1 per cent solution of cocaine, 15 drops of adrenalin, and 5 to 6 cm. of normal salt solution are used. The injections are made at the same point, with additional injections in the superior, inferior, anterior, and posterior walls of the external auditory canal, just at the junction of the cartilaginous and membranous canal. The operations were completed with practically no pain except in the radical operations, the curetting of the Eustachian tube was always painful, even when a pledget of cotton was soaked in a 20 per cent solution of cocaine had been applied, but as this required only a moment, this is not looked upon as a serious objection.

The value of nystagmus in a differential diagnosis of cerebellar abscess and suppuration of the labyrinth, is pointed out by Neumann.⁸⁴ In suppuration of the labyrinth the nystagmus becomes less and less marked, and finally disappears as the suppuration extends; while in cerebellar abscess the nystagmus increases as the disease progresses. In suppuration of the labyrinth, the nystagmus occurs in the beginning when the eye is turned toward the diseased side; whereas this may disappear and the nystagmus still be present when the eye is turned to the well side. In cerebellar abscess the conditions are reversed, and the nystagmus is first observed when the eye is turned to the normal side, and then later turns to the diseased side. When this form of nystagmus is observed, a positive diagnosis of cerebellar abscess can be made. Another point in the diagnosis, is, that if after the labyrinth has been opened by operation, the nystagmus due to the labyrinth trouble rapidly subsides; while the nystagmus due to the cerebellar abscess remains the same.

The clinical value of blood examinations in otitis media purulenta and its complications have been discussed by Hubby,⁸⁵ who believes that the condition of the blood to be an accurate and delicate barome-

ter of the entrance of pathogenic bacteria and their products. He says it is necessary to make repeated examinations and determine the progress of the process; but the clinical symptoms must be given greater weight than a mere leucocyte determination.

The question of a primary tuberculosis of the mastoid in childhood, was taken up by Ismer,⁸⁶ who found that 13 per cent of all mastoid cases are tubercular; about half of the cases are primary, and that this infection takes place through the blood. The other half of the cases are secondary to the tuberculosis of the lymphatic tissue. He found that the onset of the disease is a gradual one, with little or no pain. The macroscopic appearance at the time of operation does not lead one to suspect a tuberculosis. The only positive evidence of a tuberculosis of the mastoid, is the microscopic examination of the diseased tissues. The prognosis following the operation of a primary tubercular mastoiditis is, according to Ismer, very good; but in the secondary cases, the spreading of the primary focus menaces the life of the patient.

As a simple means of relieving the earache of acute otitis media, Neumann⁸⁷ has found that by introducing into the external auditory canal, cotton compresses moistened with ordinary lead water, and applied to the concha and its vicinity, complete relief is obtained. The treatment of otitis media by Bier's artificially induced hypermia, has received considerable attention. After reviewing the reports of Keppler, Heine, Hinsberg, Stanger and Fleischmann, and analyzing the results obtained in the ear clinic at Halla, Ismer⁸⁸ has arrived at the following conclusions: 1. The treatment of otitis media by Bier's method, is not free from danger, as the treatment is limited to this procedure; the proper moment for surgical interference may pass, and the outcome be unfavorable. 2. More experience will be required in order to determine for what cases this form of treatment is best suited, and how long it may be safely continued. This form of treatment seems to be especially dangerous in the so-called cases of diplococcus otitis. 4. Bier's method is absolutely contra-indicated in cases of otitis media where there are intracranial complications present. The indications for operation in chronic purulent otitis media have received considerable attention. There seems to be a trend to greater conservatism. The indications have been discussed by Smye⁸⁹ and Knapp.⁹⁰

A new method for exposing mastoid bone is described by Hammond.⁹¹ The incision is triangular instead of being straight, as in the usual method; beginning one-half inch back of the superior post-auricular attachment, extending through all the tissues obliquely backward and downward along the hairy margin to a point just below the middle of the posterior border. From this point the incision is

again carried through all the soft tissues forward and downward to the posterior border of the digastric fossa. By this incision all the post-auricular vessels and nerves are avoided, except some of the minute auricular branches of the occipital. The radical mastoid operation is modified by Bryant⁹² and Heath⁹³ to allow the preservation of normal hearing. Bryant makes a U-shaped myringotomy and opens the mastoid antrum. The outer anterior wall of the antrum is taken away with the exception of enough to support the annulus and adjacent membrana tympani. By this procedure the upper and back part of the tympanum is drained through the meatus, without permanent injury to the sound-conducting apparatus. The results obtained from the radical mastoid operation in chronic purulent otitis media, have been discussed by Smith⁹⁴ and Dench.⁹⁵ The latter found that in a series of 95 cases, the cures amounted to exactly 80 per cent. In four of these a facial paralysis occurred, but the function was later fully restored. As for the hearing, there was an improvement in the majority of the cases.

The blood-clot method of wound repair in aural surgery, has been the subject of considerable discussion during the past year. Sprague,⁹⁶ Blake,⁹⁷ Riek,⁹⁸ and Bryant⁹⁹ are among its most ardent advocates. Sprague has employed this method in 69 acute mastoid cases, 42 of which healed in from 7 to 15 days. He also employed the method in 16 radical cases; only 2 succeeded perfectly, and 5 partially. According to Sprague, the blood clot is contra-indicated in all acute infectious diseases, in tuberculosis, diabetes, or chronic constitutional ailments. He also considers all cases of intracranial involvement, as contra-indications for any blood clot method. Dench¹⁰⁰ reports only failures from this method; and Jack's¹⁰¹ experience in the Massachusetts Charitable Eye and Ear Infirmary, led him to conclude that this method has no advantage over the ones generally employed.

The relation of ear affections and mental disturbances has recently received more attention. Amberg¹⁰² found that the ear participates in the production of mental disturbances, directly or indirectly. The mental disturbances can be brought about in two ways: 1. By causing hallucinations, respectively, illusions, the influence of which is more or less strong, according to the predisposition of the afflicted individual. Entirely different from these disturbances, are; 2, those in which the ear and its surrounding parts are simply the place in which a toxemia is primarily created, or in which an abscess engaged the vitality of the body. Both conditions can produce mental disturbances and aggravating pre-existing mental abnormal conditions. He thinks it very probable also that without a predisposition, mental disturbances can be created; if for example, the annoying subjective noises create a state of exhaustion, e. g. neurasthenia; these condi-

tions are of import from a forensic point of view. Amberg believes that ears of inmates of insane asylums should be examined, and that patients suffering from mental disturbances who exhibit phenomena on the part of the organ of hearing, but also of other organs, such as the kidneys, on account of the fact that the disturbance in the ear, although in itself a new center, may only be a reflex disturbance. The benefit of surgical interference in ear affections should be bestowed on the insane in need of it. Bryant¹⁰⁰ examined 161 patients at the Manhattan Hospital, most of whom were chosen on account of their hallucinations of hearing. The rest were taken without any special plan. The classification is as follows: Dementia, sixty-three; paranoia, twenty; dementia paralytica, twenty; alcoholic insanity, nineteen; mania, sixteen; senile dementia, fourteen; various, three. The ear classification is as follows: Otitis media catarrhalis, seventy-one; otitis media purulenta (active or cicatrized), thirty-eight; foreign bodies, fourteen; labyrinthine or nerve disease, twenty-three. Among 161 cases there were 15 with no ear disease; hallucination of hearing, 134 cases, and only three cases had perfect normal hearing. Of the 134 cases with hallucinations, 120 had ear disease; 63 with tinnitus. The improvement of the total 161 cases due to oto-rhinological treatment was only 37-10 per cent, while out of the selected cases, 62 showed marked improvement, and the balance some improvement.

REFERENCES.

1. Journal of Laryngology, July, 1906.
2. Laryngoscope, March, 1906.
3. Laryngoscope, June, 1906.
4. Laryngoscope, October, 1906.
5. Journal of Laryngology, November, 1906.
6. Journal of Laryngology, November, 1906.
7. Archiv f. Laryngologie u. Rhinologie, Band xvii, H. 1.
8. Laryngoscope, April, 1906.
9. Laryngoscope, November, 1906.
10. Laryngoscope, March, 1906.
11. Laryngoscope, April, 1906.
12. Laryngoscope, January, 1906.
13. British Medical Journal, Nov. 17, 1906.
14. Journal of Laryngology, London, Nov., 1906.
15. Laryngoscope, Feb., 1906.
16. Archiv f. Laryngologie u. Rhinologie, Band xviii, H. 3.
17. Laryngoscope, July, 1906.
18. Journal of Laryngology, Oct., 1906.
19. Laryngoscope, March, 1906.
20. Archives intern. d. Otol., etc., 1906.
21. Archiv. f. Laryngologie, Band xviii, H. 3.
22. Zeitschrift f. Ohrenheilkunde, lii, H. 3.
23. American Journal of Surgery, Sept., 1906.
24. American Medicine, Feb. 17, 1906.
25. Jour. A. M. A., July 19, 1906.
26. Laryngoscope, May, 1906.
27. Berliner Klinische Wochenschrift, Sept. 10, 1906.

28. N. Y. Med. Jour., Sept. 22, 1906.
29. St. Paul Med. Jour., Sept., 1906.
30. Therapie der Gegenwart, April, 1906.
31. Deutsch Med. Wochenschrift, Jahrgang xxxii, No. 43.
32. Journal of Minnesota Medical Association, May 1, 1906.
33. Journal of Laryngology, Sept., 1906.
34. N. Y. Med. Jour., Sept. 1, 1906.
35. Zeitschrift f. Ohrenheilkunde, Oct., Page 381.
36. Berliner Klinische Wochenschrift, No. 19, 1906.
37. British Medical Journal, May 5, 1906.
38. Annals of Otology and Rhinology, March, 1906.
39. Journal A. M. A., July 21, 1906.
40. Laryngoscope, Sept., 1906.
41. Laryngoscope, Nov., 1906.
42. Journal of Laryngology, March, 1906.
43. Berliner Klinische Wochenschrift, Nov., 1906.
44. Laryngoscope, July, 1906.
45. Monatsschrift f. Ohrenheilkunde, May, 1906.
46. Practitioner, July, 1906.
47. British Medical Journal, Nov. 17, 1906.
48. Journal A. M. A., Sept. 8, 1906.
49. Muenchener Med. Wochenschrift, Jahrgang 53, No. 20.
50. Berliner Klinische Wochenschrift, No. 23, 1906.
51. Lancet, July 14, 1906.
52. Laryngoscope, June, 1906.
53. Boston Medical and Surgical Journal, Oct. 11, 1906.
54. Medical Record, Oct. 6, 1906.
55. Laryngoscope, Jan., 1906.
56. Jour. Am. Med. Assn., Aug. 11, 1906.
57. Jour. Am. Med. Assn., May 26, 1906.
58. Archives of Pediatrics, July, 1906.
59. Boston Med. and Surg. Jour., Sept. 13, 1906.
60. N. Y. Med. Jour., Sept. 13, 1906.
61. Laryngoscope, June, 1906.
62. Annals of Surgery, Aug., 1906.
63. N. Y. Med. Jour., June 14, 1906.
64. Rev. Jour. A. M. A., July 14, 1906.
65. N. Y. Med. Jour., March 10, 1906.
66. Annals of Otology, Rhinology, Laryngology, Sept., 1906.
67. Archiv. f. Laryngologie u. Rhinologie, Band 18, H. 1.
68. N. Y. Med. Jour., June 16, 1906.
69. Lancet, July 21, 1906.
70. Monatsschrift f. Ohrenheilkunde, 39, No. 2.
71. Penn. Med. Jour., July, 1906.
72. N. Y. State Jour. of Med., Jan., 1906.
73. N. Y. State Jour. of Med., Jan., 1906.
74. Verhandlungen Sueddeutscher Aerzte, 1906.
75. Verhandlungen Sueddeutscher Aerzte, 1906.
76. Laryngoscope, Sept., 1906.
77. Archiv. f. Laryngologie, Band 18, H. 2.
78. Monatsschrift f. Ohrenheilkunde, Band xi, H. 1.
79. Archives of Otology, Vol. 35, No. 1.
80. N. Y. Med. Jour., April 14, 1906.
81. Archiv. f. Ohrenheilkunde, Band 61, H. 3 and 4.
82. Laryngoscope, July, 1906.
83. Zeitschrift f. Ohrenheilkunde, Jan., 1906.
84. Archiv. f. Ohrenheilkunde, Band 67, H. 2.
85. Laryngoscope, Aug., 1906.
86. Archiv. f. Ohrenheilkunde, Band 67, H. 1.
87. St. Petersburg Med. Wochenschrift, April 7, 1906.
88. Archiv. f. Ohrenheilkunde, Band 69, H. 1.

89. British Med. Jour., Feb., 1906.
90. Archives of Otology, Vol. 35, No. 2.
91. Medical Record, June 2, 1906.
92. N. Y. Med. Jour., Oct. 20, 1906.
93. Lancet, Aug. 11, 1906.
94. Ann of Otol., Rhinol. and Laryng., Sept, 1906.
95. Ann. of Otol., Rhinol. and Laryng., Sept, 1906.
96. Transactions of the American Otological Society, 1906.
97. Transactions of the American Otological Society, 1906.
98. Transactions of the American Otological Society, 1906.
99. Ann. of Otol., Rhinol. and Laryng., March, 1906.
100. Transactions of the American Otological Society, 1906.
101. Transactions of the American Otological Society, 1906.
102. Journal of Nervous and Mental Diseases, Sept., 1906.
103. Medical Record, Aug. 25, 1906.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

M. F. ENGMAN, M. D.

It is the intention of the writer to refer in this article to only those papers of the year which have appealed to him as of the greatest practical value and interest. Ultra-scientific observations are difficult to concisely abstract, and require time and space for their proper elucidation, therefore we will make it our effort to give a purely practical outline of this purely practical subject—the “Etiology of Syphilis.” The year 1906 marks an epoch in the history of medicine, through its great work in advancing the knowledge of syphilis. Not since the day of Hunter and Ricord has a marked advance been made in the study of this disease, which can, in its wayward, subtle way, imitate almost any group in the field of dermatology, and, we may go farther and say, with Hutchinson and Keyes, that no disease is sacred to its mimicry. Therefore, as syphilis is of such vital significance to dermatology as a whole, and as a proper understanding of the work of the year in this disease is therefore of such importance to all, we intend to devote this article to the subject of syphilis.

In the latter part of our review of last year, we gave a lengthy account of the findings of Schaudinn and Hoffman in their investigations of syphilitic lesions. Schaudinn, a biologist and an expert upon protozoa, was appointed by the German government to investigate the work of Siegel, who claimed to have found a protozoa-like organism in the lesions and blood of syphilitics, which he called the *cytorrhitis lues*. Thus, during the investigation of Siegel's work, Schaudinn discovered a peculiar corkscrew-shaped organism from the scrapings and serum from chancres, which he named *spirochaete pallida*. Schaudinn at once called to assist him Dr. Hoffman, an army surgeon, versed in the clinical types of syphilis. Their first publication occurred in April, 1905. The scientific world, ever ready for new fields, began work at once, and an enormous literature quickly accumulated. Journals teemed with confirmatory reports of Schaudinn and Hoffman's findings. At the close of the year 1905, the organism of Schaudinn had been found in the initial lesion of syphilis, in the lymphatic glands, the blood of syphilitics and the scrapings of serum from secondary syphilitic lesions. Other forms of *spirochaete* had also been found in syphilis, yaws and carcinoma, but the pale form, as described by Schaudinn, had only been demonstrated from syphilitic lesions.

Schaudinn at first classed this organism as a true *spirochaete*, but in

October of the same year he changed his opinion, taking it from the group of protozoa and placing it, after Villemin, with the spironema, calling it the spironema pallida. F. G. Novy, with others, on account of the apparent resistance of the organism, believes that it rather approaches the bacteria in its qualities.

The literature upon the organism of Schaudinn illustrates the wonderful activity of the age, and particularly of the scientific world. The writer has before him a complete bibliography upon this subject to November of this year; page after page, in fine type, enumerating hundreds of papers and monographs, from hundreds of investigations, tells the story of labor and the thirst for knowledge. Yet it is not with pride that we see so few accredited to American writers. Germany is first upon this list, next Italy, then France and England. How sad is life and how cruel is fate, when we pause in the study of this literature to think that death has deprived the world of the great Schaudinn, and has taken him from the midst of his labors all too soon for him to realize the greatest achievement of his life; in fact, one of the greatest achievements in medicine.

The beautiful technique and methods described by Leviditi, discovered the organism of Schaudinn in syphilitic lesions. This method thus proved the means by which was unfolded a wealth of knowledge, and gave to the study of the etiology and pathology of syphilis a new impetus. Thus to that master of technique, Leviditi, we owe much, as through his method, given below, we are enabled to study the organism of Schaudinn in the tissues, their condition, changes and their relation to the known pathological features of the disease. Leviditi's method is as follows: First, place a small piece of the tissue in 10 per cent. solution of formalin; harden in alcohol, 95 per cent.; wash in distilled water five minutes; stain in 1 per cent. solution of silver nitrate in distilled water for three days; then leave the tissue in the following mixture for twenty-four hours:

Pyrogallie acid	4
Formalin	5
Distilled water	100

Wash in distilled water, then pass into alcohol xylol and prepare in paraffin. Stain sections in Giemsa stain for three or four minutes; differentiate with alcohol and oil of cloves, then wash with alcohol and clear with oil of bergamot, then wash in xylol and mount in balsam. By this method the spirochaete are stained black and can be easily seen, as they are swollen by the silver nitrate. The cells are blue and the connective tissue is yellowish-green. It is not necessary that the sections should be very thin. Through this method, which has been variously modified, the little corkscrews can be seen through the tissue.

As was said before, it would be impossible to quote each paper of importance in the study of the etiology of syphilis, and we therefore give a resume of the most practical points. The impregnation method of Leviditi shows the spirochaete in every known syphilitic lesion. The silver nitrate swells the organisms beyond their normal proportions, thus rendering them easily visible. In infants dead of syphilis, they are massed throughout the tissues in myriads, in the lung, liver, kidneys, spleen, skin, heart and vessels, everywhere. In many instances the tissues and system seem to be literally overwhelmed with them. No picture, as many writers state, can be more convincing of the pathogenicity of an organism. In the acquired form of the disease, the organisms, as would be expected, are not found in such numbers, yet the lesions present them in proportion to the severity of the type and acuteness of the pathologic change. The condylomata and chancres prove to be a particularly rich flora. It is believed by various observers that through the initial inoculation, the chancre, the organism gains access to the lymphatic system, and thus contaminates the general circulation, which carries the parasites to the skin and various organs, where they lodge as small emboli, and by proliferation cause the lesions peculiar to the disease. Thus, in the so-called secondary outbreak, there is an acute flooding of the system, while at numerous points in the skin, minute foci begin to proliferate and produce the secondary roseola, and later the more permanent papular stages. Finally, the tertiary lesions are formed by the reawakening of old foci of infection.

This explains very beautifully and rationally the pathology of the disease, and it is interesting to compare the present developing pathology with the known histopathology as laid down in late years by Neuman and Unna. How beautifully the spirochaete conforms to the studies of these writers; how easily, too, does it seem to fit exactly the clinical types of the disease and the facts known and demonstrated years ago. The early flooding of the system, the dissemination of the parasite, secondary efflorescences, tertiary lesions, etc. It has, for instance, long been known that the syphilitic virus dies soon after the death of its host, the syphilitic, as no authentic case of post-mortem infection has been reported. The spirochaete we know, being a protozoan organism, dies soon after its host, as other forms of spirochaete do not live but a short time in dead matter. Therefore to infect, the organism must shortly have left an animal body. It has long been known that the blood from syphilitics is rarely infectious. Nattan-Larrier and A. Bergeron find the organism in the blood from secondary lesions, while it is very difficult to demonstrate them from the peripheral circulation in acquired syphilis. In the former instance, the parasite is probably washed from the lesion by the blood, and is then, of course, easily demonstrable.

Revaut and Ronselle speak of the great difficulty of catching the organism from the peripheral circulation of adults, while in syphilitic infants, fatally ill from the disease, it is easily found in the blood from the finger-tips. A microphotograph of such a smear, showing the spirochaete in a clump, not unlike a bunch of earthworms, appears in their article.

Leviditi and Petresco obtained the spirochaete from the serum of blisters artificially produced on the apparently sound skin of syphilitic individuals during the secondary stage. It is a well-known fact that during the secondary period of syphilis a lesion is likely to occur at points of previous irritation, trauma, or pathologic change, which can probably be explained from the advantage of our present knowledge by the fact that in such a previously changed point the vessel's walls and their caliber are altered, there is a consequent change in the blood-stream, an outward mechanical forcing of the spirochaete, which thus lodge upon the vessel-wall, or pass out with the serum or leucocytes, and by proliferation produce a lesion. Of Leviditi and Petresco's blister experiments, the above is probably an explanation.

It has been reported by Levy-Bing that mercury has the property of causing the rapid disappearance of the spirochaete from syphilitic lesions, while others assert that it has no effect upon them. Neisser states, in his experiments in Batavia, upon syphilis in apes, that mercury does not affect materially the course of the disease.

Syphilis is such a protean disease, and causes such an extended group of symptoms, that it is with intense interest that we await the investigations in relation to the spirochaete in the so-called parasymphilitic affections, tabes and paresis. G. Catola failed to find the organism of Schaudinn by the Leviditi method in five cases of paresis and several of tabes, and he believes, through his researches and those of Marenesco and Minea, that paresis is not due directly to the organism of syphilis, and is not, therefore, to be considered a syndrome. Leriaux and Geets, in their culture experiments from the spinal fluid of forty-two cases of acute syphilis, succeeded in finding the organism in three cases. These writers attempted the cultivation of the spirochaete, and claim startling results, which, if confirmed, will give the whole life-cycle of the organism. The spinal fluid, as was said before, from forty-two cases of secondary syphilis, was drawn. This fluid was diluted in the proportion of 1 to 2 with peptone bouillon and placed in the incubator for three to four days at 37 degrees, then inoculated upon pig serum, upon which appeared a very thin growth. In the different stages of development the authors first observed under the microscope an oval body that resembled the cytorrhyses of Siegel, and then a trypanosome-like body and then the trypanema of

Schaudinn enclosed in protoplasmic matter. It will be remembered that Siegel claimed that his organism, the cytorrhyses lues, was the specific organism of syphilis, as he found it in the blood of syphilitic individuals and also in the blood of rabbits when inoculated from the blood of syphilitics. If the findings of Leuriaux and Geets are confirmed by others and inoculation experiments, then we have the whole picture of the pathogenesis of syphilis before us, a polymorphic organism undergoing a peculiar life-cycle in the body of an animal, causing in man and monkeys the syndrome which we call syphilis. If this be true, then the work of the years 1905 and 1906 will prove of untold benefit to humanity, then the mysteries of tabes, paresis and the unique types of syphilis will be unraveled and probably in the near future the terminal sequelæ of this disease can be prevented. From our present knowledge of the spirochaete pallida and the pathology of syphilis, the mere thought that this organism may be the cause of the disease assists us in its therapeutic management and in the more proper understanding of its unique and wayward clinical types.

Thibierg, in a most excellent résumé of this question, asks at what conclusions are we to arrive in the study of this subject? Are we to consider the spirochaete pallida the specific pathologic agent of syphilis? He then reviews the rules of Koch and sums up his conclusions as follows: The organism of Schaudinn and Hoffman is found in the blood of syphilitics, in all the lesions of secondary syphilis and is remarkably frequent in the cutaneous and visceral lesions of hereditary syphilis. The organism has been observed in the walls of gummas, although the virulence of the latter lesion has always been held in doubt. They have been found in the inoculation experiments with monkeys and the accidental inoculations in man. It is equally proved that the spirochaete pallida are not observed in lesions not in relation to syphilis. It has been searched for in various other diseases of the skin, in simple chancre, herpes and other ulcerating conditions. This parasite responds, then, to the two first terms in the definition of a microorganism's pathogenesis. The experiments upon animals which permit the reproduction of lesions which constantly contain the spirochaete is a strong argument in the pathogenicity of the organism. From these various studies, results and findings, he believes that the spirochaete can well be called the parasite of syphilis.

It has been the usual teaching that the tertiary or gummatous lesions were not infectious, but through the experiments of Finger and Neisser, who have caused primary and secondary syphilis in monkeys by inoculation from material from a gumma, or tertiary lesion, we must admit that the tertiary lesions do contain the active prin-

ciple of syphilis, as the spirochaete have been found in the gummata and tertiary lesions. They are, however, mostly confined to the walls and peripheral portion of the lesion. Through the investigation of Levaditi, we know that the healthy spirochaete are not found in the broken-down contents of the gumma, as they, with the tissues, undergo degeneration and death, but the typical, healthy-looking organism can be demonstrated in the gumma wall. This would confirm the clinical findings of various older writers, as numerous observers have held that gummata were infectious. If the inoculation material happened to be obtained from the wall of the gumma, and thus contained live spirochaete, it would be as infectious as material from a secondary lesion, according to Williams.

From the above remarks and the scientific data which is piling up every day to assist in proving the pathogenicity of the spirochaete pallida, one can readily see that we are on the eve of the confirmation demanded by Koch. This confirmation only needs the cultivation of the organism on artificial media and the inoculation of the organism thus cultivated into a susceptible monkey, and the production therein of the syphilitic syndrome.

Syphilis in Monkeys.—Various investigators have carried on the work initiated by Metchnikoff and Roux, Neisser and Lassar. Neisser has been working in Batavia with an unlimited supply of material. The results he has obtained are very important. He finds the period of incubation in monkeys is from three to five weeks. The most favorable point he has found upon the eyebrows and upon the genital organs, and the best results were obtained from fresh material such as condylomata, mucous patches and papules. Inoculations from the blood and serum did not succeed; however, he had one successful inoculation from material from a tertiary lesion. He also obtained successful results in inoculations from the spleen, bone marrow, lymphatic glands and testicles. Negative results followed the use of the spinal cord, ovaries, kidneys, muscles and liver. The virulence in all cases seemed to be of about the same degree, although it seemed that it was slightly increased by continuous passage through monkeys. Higher monkeys are more susceptible than the lower ones. Subcutaneous inoculations were never successful, and Neisser believes that it is possible to increase the production of antibodies in an organism by subcutaneous injection of the virus. The administration of mercury did not influence either the development of the primary lesions or the general course of the disease.

Metchnikoff and Roux have established a dangerous precedent and false security in their experiments with the syphilitic virus, claiming that it is destroyed after inoculation by the application of a strong calomel salve. A young surgeon allowed himself to be inoculated

with syphilis, and in one hour after, a salve of calomel and lanolin was well rubbed into the part. No results were obtained from the inoculation, and it was thought the disease was probably prevented by the application of the antiseptic. Several writers took a public stand against this generalizing from a single case, as they feared it would lull into a sense of false security.

Neumann, in a very exhaustive article, reviews his position of many years ago on the etiology of relapses in syphilis. His conclusions may be summed up as follows:

1. The late syphilitic relapses, the relapses in situ as well as the metastatic relapses, have their origin in the microscopically demonstrable syphilitic products, including the syphilitic lymph glands, which persist after the disappearance of the clinical manifestations. These may exist a very long time, even more than a decade.

2. The complete elimination from the organism of all the germs of the disease as promptly as possible, therefore, follows as a fundamental indication in the treatment of syphilis.

Treatment of Syphilis.—Wild remarks that the difficulty in estimating the relative value of the different methods of treatment of syphilis is largely due to the fact that most cases of primary or secondary syphilis will recover sooner or later spontaneously without any treatment whatsoever. He substantiates his remarks by referring to the number of patients with tertiary lesions who have never had any specific treatment, who have recovered from the primary and secondary symptoms. He, however, does not wish to go so far as Unna, who says that even the most severe secondary symptoms ultimately disappear without treatment, or as Fox, who takes the position that the disease tends in every case to run a natural course and heal spontaneously. This tendency, he remarks, is undoubtedly the explanation of the great success claimed for the various methods of treatment, especially those in vogue in England during the last quarter of a century, when there was a great reaction against the use of mercury. At this period vegetable alteratives were largely used, the benefits from which came from the groups of toxic glucosides which they contain. These glucosides are in the form of saponins, which have a peculiar effect upon the blood corpuscles. They are very unstable bodies, and are only obtained from the fresh plant. The author admits that many cases of syphilis will recover without mercury, but believes that both primary and secondary symptoms are much lessened by its use and the liability to tertiary lesions are diminished. He prefers mercury by the mouth as it is, taking it in all, the most satisfactory mode of treatment. He says he has never regretted giving mercury early, but he has several times regretted withholding mercury until the appearance of the secondary rash. The ideal treat-

ment is to maintain the influence of mercury upon the tissues for a sufficient length of time to destroy the virus, but without injury to the tissues, therefore the rate of the elimination of mercury is of great importance. For some months after a course of mercury it can be detected in the urine and therefore the patient is still under the control of the drug, and for this reason he also prefers the interval treatment. Full doses of the iodide of potash aids the elimination of mercury and prevents its action upon the body. For this reason it should be withheld in the acute stages of the disease. In speaking of the action of the iodides in syphilis he says they do not appear to be of a specific nature, but act in causing the absorption of lowly-organized cells. They do not prevent the occurrence of tertiary lesions, as he has seen them recur during a course of the iodide of potash. He lays particular stress upon treating the patient as well as the disease, keeping him at the highest point of resistance.

Burgi has carefully carried out a series of observations as to the amount of mercury secreted in the urine during and after administration. These observations were taken daily. He found that where daily inunctions of 2 gm. of mercury were given, small quantities of mercury could be detected in the urine after twenty-four to forty-eight hours. After this the amount excreted increased daily up to 2 milligrams. The amount of urine was also increased up to a certain period and then decreased. Similar results were obtained from the use of Wielander's method of having the patient wear a sack containing mercury near the skin. Patients occupying the same room also had small quantities of mercury in their urine. After administration by the mouth, the drug appeared in the urine very rapidly, and the diuretic action was more marked than following the inunctions. Following intramuscular and intravenous administration of the drug, the appearance in the urine was greater than following the inunctions and the increase was very rapid. In regard to the length of time mercury remains in the body after cessation of the administration of the drug, the author does not believe that this period exceeds six months.

Garceau strongly supports the use of the soluble salts by injection, and particularly the sozoiodolate of mercury. He says that, although they are inconvenient from the necessity of frequent injections, they are the best absorbed and tolerated, and there remains no danger of leaving mercury in the tissues for further trouble. These injections are less painful than the insoluble salts, and they keep the patient under almost daily supervision during the acute stages of the disease.

BIBLIOGRAPHY.

- Novy, J'l American Med. Association, June 9, 1906, p. 1794.
 Levaditi. *Annals des Institut. Pasteur.* 1906. No. 1, p. 41.
 G. Catola. *Riv. di Pathalog. Nervoso mentale*, fasc. 5. May, 1906.
 Leuriaux and Geets. *Pres. medicale*. No. 3. 1906.
 Nallan-Larrier. *Pres. medicale*. No. 3. 1906.
 A. Bergeror. *Pres. medicale*. No. 3. 1906.
 Revaut Ponselle. *Gaz. des Hopiteaux*. No. 86. 1906.
 Levaditi and Petresco. *Press medicale*. No. 78. 1905.
 Thibierg. *Gaz. des Hopiteaux*. Jan., 1906.
 Metchnikoff and Roux. *La Tribune medicale*. May, 1906.
 Williams. *Med. Record*. July 19, 1906.
 Leurieux and Geets. *Centrlbl. f. Bakt. und Parasit.* Bd. 41, 1906; Aug. Hft. 6.
 Neisser. *Deutsche med. wochen.* 1906. 2, 3.
 Metchnikoff and Roux. *Archiv. gen. de med.* June 27, 1905.
 Ferre. *Compt. rend. de la Soc. de Biol.* Jan. 19, 1906.
 Richardson and Hunt. *Lancet*. March 10, 1906.
 Dudgeon. *Lancet*. March 10, 1906.
 Sezary. *Press medicale*. No. 24. 1906.
 Siebert. *Deutsche med. woch.* Bd. 31, No. 41, 1906.
 Siegel. *Muench. med. woch.* Bd. LVIII. No. 2. 1906.
 Neumann. *Med. Record*. April 28, 1906.
 Alvarre. *J'l Am. Med. Association*. June 2, 1906.
 Burnett. *Brit. J'l Dermat.* Oct., 1906.
 Kraus. *Archiv. de derm. et syph.* p. 39. 1906.
 Lowy. *Archiv. derm. et syph.* p. 107. 1906.
 Entz. *Archiv. derm. et syph.* 1906.
 Wild. *Brit. J'l Dermat.* May, 1906.
 Burgi. *Archiv. derm. et syph.* pp. 3-305. 1906.
 Garceau. *J'l Cutaneous Diseases*. July, 1906.
 Krzyzstalicz. *Monatsh. f. Prakt. derm.* Vol. VLVII. p. 1, 1906.

BOOK REVIEWS.

MINOR OPERATIVE SURGERY, INCLUDING BANDAGE. By Henry R. Wharton, M. D. Sixth edition, enlarged and thoroughly revised. Lea Bros. & Company, Philadelphia and New York, 1905.

The fact that this work appears now in its sixth edition and comparatively only a short time has elapsed since the first edition was printed is, perhaps, the highest attest to its popularity which can be made. Gradually the importance of the work has increased with each edition. More and more place has been allotted to operative surgery and withal it has outgrown its original field of usefulness. In its full grown form it serves as an adequate guide to operations upon the cadaver, and is naturally of value to the younger surgeon. Nor is this all: in the chapter upon sutures, for instance, the various forms of wound closure are most fully taken up and the illustrations are adequate to give, even the uninitiated, an idea of the various ways in which wound edges may be coapted with the needle and thread. Short chapters upon the preparation of aseptic surgical dressings are also presented, hence, the volume may be dignified by the title of a small general work on surgery.

SURGICAL SUGGESTIONS. Practical Brevities in Surgical Diagnosis and Treatment. By Walter M. Brickner, M. D., Chief of Surgical Department, Mount Sinai Hospital Dispensary, New York, and Eli Moschcowitz, M. D., Assistant Physician, Mount Sinai Hospital Dispensary, New York. Duodecimo; 60 pages. New York: Surgery Publishing Co., 1906. Cloth, 50 cents.

This little book is most novel, not only on account of the many original terse and epigrammatic practical suggestions given, but its general appearance and attractive form. It contains 250 suggestions grouped under proper headings and its contents is carefully indexed. While some of the items are familiar to the practical surgeon, they are presented in a manner that will impress them on the reader's memory.

INTERNATIONAL CLINICS, a quarterly of illustrated clinical lectures, and especially prepared original articles. Edited by A. O. J. Kelly, A. M., M. D. Published by J. B. Lippincott Co., Philadelphia. Vol. IV, 16th Series. Cloth, \$2.00 per volume; half-leather, \$2.25.

The concluding volume of this series compares favorably with its predecessors. Among the interesting original articles may be mentioned: "Pulmonary Tuberculosis in the Middle-Aged and the Aged," by J. E. Squire; "The Principles of Treatment of Fractures of the Lower Extremities," by G. G. Ross; "The Treatment of Hemorrhoids," by G. P. Muller; "The Mastoid Operation," by C. W. Richardson.

The variety of subjects covered and the character of the articles places this volume consistently in sequence to its predecessors.

GENUSSMITTEL—GENUSSGIFTE? Von Dr. med. W. Roettger. 1906. Verlag von Elwin Staude, Berlin.

By means of a circular letter, the author has obtained the opinion of a large number of German physicians on the use and abuse of coffee and tea. The consensus seems to be that both are dangerous poisons.

ESSENTIALS OF HUMAN PHYSIOLOGY. By D. Noel Paton, M. D., etc. Second edition. 1905. W. T. Keener & Co., Chicago. William Green & Sons, Edinburgh and London.

This volume is intended primarily for medical students. It aims to put before them as succinctly as possible the essential facts of human physiology, laying especial emphasis upon those features that have clinical importance. The book cannot of course compete with real text books, such as Howells or Tigerstedt, but may well find a place in medical schools.

AN INTRODUCTION TO PHYSIOLOGY. By William Townsend Porter, M. D. Philadelphia and London: J. B. Lippincott Co. 1906.

The second edition of this invaluable laboratory guide will be welcomed by all who are interested in the teaching of physiology. The first edition, with its pamphlet predecessors, produced a revolution in physiological laboratory teaching throughout this country. Whether he uses it as a student's guide or not, every teacher of physiology will have this little volume at his elbow for guidance and inspiration.

OUTLINES OF APPLIED ANATOMY: with Special References to Surface Landmarks. By Richard J. A. Berry. With forty-six illustrations. Edinburg. William Green & Sons.

In this volume of two hundred and forty-four pages, the author has endeavored to bridge over the gap, which he mentions as existing between the work in the dissecting room and the practical work of the physician, in as far as the latter has an anatomical bearing. Assistance has been given to him by various specialists in preparing the illustrations and text, hence this gives the book an added value. It is essentially a study of anatomy upon the living subjects—the practical application of this science.

ATLAS AND TEXT-BOOK OF HUMAN ANATOMY. Volume I. By Prof. J. Sobotta, of Wurzburg. Edited, with additions, by J. Playfair McMurrich, A. M., Ph. D., Professor of Anatomy at the University of Michigan, Ann Arbor. Quarto volume of 258 pages, containing 320 illustrations, mostly all in colors. Philadelphia and London: W. B. Saunders Company, 1906. Cloth, \$6.00 net; half morocco, \$7.00 net.

This volume, which is the first of the series, covers the bones, ligaments, joints and muscles of human anatomy. The accuracy of the illustrations entitles it to the name Atlas more than any similar publication which has appeared within the last few years. The thorough and concise descriptive text, explaining the numerous plates, makes it a volume of great value, both to the student who is working in the laboratory and the practitioner who has short space of time to refresh his memory on certain anatomical points. No wood-cuts are employed in this volume, but the plates are produced by multi-color lithography, in the majority of instances, the remainder being produced by the half-tone method. We would particularly recommend the chapter on Articulations.

THE AMERICAN ILLUSTRATED DICTIONARY. All the terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry and kindred branches; with over 100 new tables. By W. A. Newman Dorland, M. D. Fourth Revised Edition. Octavo of 836 pages, with 293 illustrations, 119 of them in colors. Philadelphia and London: W. B. Saunders Company, 1906. Flexible morocco, \$4.50 net; thumb indexed, \$5.00 net.

Since the last issue of this dictionary, that of August, 1905, over 2,000 new words have been defined, and numerous improvements made throughout the text. The illustrations have been increased by the addition of six new colored plates of various clinical conditions, making a medical dictionary sufficiently full for the varied requirements of all classes of medical men. The page is large, with a clear but compact typography, and the system used for expressing the sounds in the pronunciation of words is extremely simple and accurate. The book occupies a position midway between the large, unwieldy lexicon and the abridged student's dictionary, and avoids the disadvantages of each.

ABDOMINAL OPERATIONS. By B. G. A. Moynihan. Philadelphia and London: W. B. Saunders Company.

It is less than a year since the first volume of this valuable work appeared. Still, the demand has been so great for the book that a second edition was neces-

sary, and, furthermore, the well-known genius of hard work possessed by Mr. Moynihan would not allow this edition to go forth without a complete revision of the work. Chapters have been re-written and illustrations added in large numbers. In the newer portions of the work, credit is given two American surgeons, W. J. Mayo and J. B. Murphy, for the impulse which led the author to their composition. There is little to be added in a review to what was stated of the first edition in its pages when it appeared. It was then admitted that no other single volume on abdominal operations quite came up to the mark, except by this eminent English surgeon, and the value of the second edition will be readily seen by those who are familiar with the first, and surely the library of no surgeon can be said to be complete unless it possesses one of them.

INTERNATIONAL CLINICS, a quarterly of illustrated clinical lectures, and especially prepared original articles. Edited by A. O. J. Kelly, A. M., M. D. Published by J. P. Lippincott Co., Philadelphia. Cloth, \$2.00 per volume; half leather, \$2.25. Volume III, 15th series.

As in the previous numbers of this publication, there are many articles of great value to the general practitioner. Of especial interest is the article on Ethyl Chloride, Its Value as a General Anesthetic, by Thomas D. Luke, B. S., F. R. C. S.; also an article on the Therapeutic Uses of the Roentgen Ray, by George C. Johnson. The other contributions are of equal value, but are too numerous to mention.

INTERNATIONAL CLINICS, a quarterly of illustrated clinical lectures, and especially prepared original articles. Edited by A. O. J. Kelly, A. M., M. D. Published by J. B. Lippincott Co., Philadelphia. Cloth, \$2.00 per volume; half-leather, \$2.25. Volume I, 16th series.

This volume includes the progress of medicine in the year 1905, by A. A. Stevens, D. L. Edsall and J. C. Bloodgood, making a most comprehensive compilation of the work accomplished in medicine, surgery and treatment. In addition to this, there are many original communications, similar to those that have appeared in the previous numbers of this series.

INTERNATIONAL CLINICS, a quarterly of illustrated clinical lectures, and especially prepared original articles. Edited by A. O. J. Kelly, A. M., M. D. Published by J. B. Lippincott Co., Philadelphia. Cloth, \$2.00 per volume; half-leather, \$2.25. Volume II, 16th series.

This volume contains similar material to that which has appeared in those already published. The contributions on medicine are particularly strong and of wide range. George G. Ross makes a valuable contribution to the treatment of fractures, especially those of the upper extremities.

INTERNATIONAL CLINICS, a quarterly of illustrated clinical lectures, and especially prepared original articles. Edited by A. O. J. Kelly, A. M., M. D. Published by J. B. Lippincott Co., Philadelphia. Cloth, \$2.00 per volume; half-leather, \$2.25. Volume III, 16th series.

This volume seems unusually inviting in its contents, a glance at which shows such interesting articles as the following: "Professor Fournier's Recent Modification of His Treatment of Syphilis," by H. Saingery; "Some Accidental Rashes Occurring in the Course of 250 Consecutive Cases of Typhoid Fever," by D. J. M. Miller; "The Hyperemia Treatment of Swollen Joints," by E. H. Bradford; "The Pelvis of Lame Women," by A. Pinard. We note that there is a consistent improvement in the character of articles appearing in this valuable series of clinics. It is a series of the greatest value to one busily engaged in general practice.

WHITMAN'S ORTHOPEDIC SURGERY. A Treatise on Orthopedic Surgery. By Royal Whitman, M. D., Instructor in Orthopedic Surgery in the College of Physicians and Surgeons, and Chief of Orthopedic Department in Vanderbilt Clinic, New York. Third Edition, revised and enlarged. Octavo, about 900 pages, with 554 illustrations, mostly original. Cloth, \$5.50 net. Lea Bros. & Co., Philadelphia and New York.

New material and many new illustrations have been added in this new edition. The volume presents a thorough revision and amendment of the last edition. Although the work is of particular value to students as a text-book, and to practitioners of medicine as a reference book, it has a distinct value to those working in the special field which it covers, in that statistics and data are included. Much that is new to surgery is set forth in the chapters on congenital dislocation of the hip, and coxa vara. In the consideration of the latter subject, the author describes his treatment for complete and impacted fracture of the neck of the femur. Noteworthy among the especially attractive features of this work is the clear, concise manner in which the author sets forth his subjects, arranging them in logical order, and carefully avoiding the tendency to introduce lengthy reports of cases and other material that make tedious reading for the student.

INTERSTATE MEDICAL JOURNAL

PUBLISHED ON THE FIFTEENTH DAY OF EVERY MONTH BY THE
INTERSTATE MEDICAL JOURNAL COMPANY

SUBSCRIPTION, \$2.00.

FOREIGN SUBSCRIPTION, \$2.50.

SINGLE COPY, 25c

Subscriptions may begin at any time. Volumes end with issues of December.

Original Articles.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. French and German articles will be received and translated free of charge, if found desirable for publication.

Reprints (200) of original articles will be furnished gratis to authors making the request, which must accompany the manuscript. Covers to these, and extra reprints, will be furnished at net cost.

Illustrations, such as plates, half-tones and zinc etchings, as in the judgment of the editors are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

Rejected Manuscripts will be returned, if stamps be sent for this purpose.

Advertisements.—Advertising forms go to press on the 5th of the month, the JOURNAL being mailed on the 15th. Time should be allowed for composition of advertisements and

for the sending and return of proofs. Advertising rates will be sent on application.

Change of Address.—In ordering a change of address, it is important that both the old and new addresses be given.

Discontinuances.—The INTERSTATE MEDICAL JOURNAL is not discontinued at expiration of subscription, but is sent until an explicit order to stop is received or a notice sent by us. A large majority of our subscribers prefer not to have subscriptions interrupted and files broken in case they fail to remit before expiration. It is therefore assumed, unless notice to discontinue is received and the amount of back subscription paid to date, that the subscriber wishes no interruption in his series. Journals returned are not notice of discontinuance.

Remittances should be made by check, draft, registered letter, money or express order. Address all communications to INTERSTATE MEDICAL JOURNAL, Linmar Building, St. Louis, Mo

INTERSTATE MEDICAL JOURNAL.

VOL. XIV.

MARCH, 1907.

No. 3

EDITORIAL.

AVENUE LOUIS PASTEUR.

The powers that preside over the literary and scientific destinies of Harvard Medical School are evidently not in accord with the elder D'Israeli, who said, in the *Amenities of Literature*, that "the author of *Piers Plowman* disdained their exotic fancies, their Latinisms, their Gallicisms, and their Italianisms." Our inference is drawn from the fact that, quite recently, the street upon which the new group of medical buildings abuts, has been named Avenue Louis Pasteur in honor of the celebrated scientist, and in slavish imitation of French street nomenclature.

That Louis Pasteur was a beacon-light in the rather dark path of science; that medical progress to-day is indebted to him for its strength and virility; that the Pasteur Institute at Paris would be a credit to any country, are facts only the foolhardy would gainsay. But though this be truth in italics, the action on the part of Harvard University to perpetuate the name of the French scientist and to Gallicise a time-honored Anglo-Saxon expression, is so decidedly out of keeping with the spirit which should inform a representative American university, that commination ought to be meted out in no veiled terms.

Harvard University has always strained a point to preserve its entity as the best expression of American thought; it has always stood for ideals peculiar to this country, and while a certain latitudinarianism is not wanting in the conduct of its affairs, its fundamental principles have always been of the Puritanic sort: the sort which anywhere else would mean narrowness and self-concentration, but in the case of so unique and excellent an illustration of our best intellectual and moral forces, spells progress on lines that should be an object lesson to all our smaller universities. And just because we have always regarded it in the light of the best that a Puritanic conservatism can produce, our sense of the understanding of these principles stands aghast at the sudden leap its stewards have taken, from the calm content of a New England security into the turbulent water of Gallicisms and those other 'isms which should find no place in our nomenclature.

Avenue Louis Pasteur may mean much to French ears but to ours it is a foolish, Gallic perversion of a simple English phrase. Pasteur Avenue,

though plain and unadorned, is undoubtedly English with nothing objectionable to a purist, and although Paris boasts of many streets commemorative of her great men, such as Avenue Victor Hugo and Rue Gustave Courbet, this does not justify a rank imitation on the part of a representative American university which has always made for the purity of the Anglo-Saxon tongue. As well call our Washington and Lincoln Streets, Street George Washington and Street Abraham Lincoln as tolerate the Harvard Medical School misnomer.

The French word "boulevard" has done much in this country to upset the tempers of our mildest citizens. Mud roads, unadorned with trees, have been dubbed "boulevards," and to cap the climax enterprising speculators have gone a step farther, just to show how they could improve on a perverted Gallic word, by naming certain streets, Lincoln Street Boulevard and Washington Street Boulevard. With these illustrations in mind we feel that our protest will be as vain as weaving ropes of moonshine, for the history of this country teaches us that when a mandate goes forth from a university such as Harvard, the little minds are ever ready to imitate, since pre-digested food means no labor on the part of man.

PHYSICAL DETERIORATION AMONG CITY POOR.

According to Percy Stickney Grant, in an article in the North American Review, the workingman in America, and what is perhaps of more importance, the workingman's family, do not fare as sumptuously as the much exploited "full dinner-pail," of political parlance, might lead the casual observer to suppose. On the contrary, merely a glance at the mass of horrifying statistics will cause such an upheaval and revulsion of feeling in one desiring to be informed on these matters, that no trace will be left of his former self-satisfaction and blind confidence in what the future will bring forth for our nation and race.

As witness to this, let us cite the fact that of our National Guard, supposed to be a body of picked men, from twenty-five to fifty per cent were unfit for military service at the outbreak of our war with Spain. Again, that of our school children in New York, as determined by a Board of Health examination, sixty-six per cent were discovered to possess serious physical defects, and ninety-five per cent of the truant and backward children were in need of a physician's care. Furthermore, according to Robert Hunter, there are seventy thousand children who go to school daily in New York without sufficient food to nourish them. Facts of this nature might be piled up *ad infinitum*, and would prove a serious reproach, did we not discover that the same fault exists in other lands; for instance, in England, where thirty per cent. of the population in the large cities and towns are said to live below the margin of proper nourishment, and in

Edinboro, where seventy-five per cent. of the school children have physical disorders due to malnutrition.

We feel that medical men are all too apt to be Laodiceans in matters of this kind ; that they are apt to look with skepticism upon the attempts made to better the condition of the poor. The physician should be the first one in the community cognizant of this fact, that either a perverse or defective nutrition during the period of growth has a positive influence toward the delay of characteristic growth, and limits the final size and robustness of development. The association that exists between malnutrition during the growing period, the employment of children as factory-workers and the deterioration evidenced by the physique of our city poor, should be clearly realized. Coupled with these potent factors, is the influence of an atmosphere filled with the pollution that arises from density of population, and the ever-present menace of infectious diseases.

Breathing parks in densely populated city districts, free baths, open air gymnasiums and play-grounds, although as yet in their incipency as factors in physical development, are not mere dreams of the philanthropic rich, but by reason of that which has been accomplished and will be achieved later on, must be regarded by physicians as most potent influences towards an improved physical welfare. To support this contention, we will cite the demonstration made by our Navy, which draws many of its recruits from the youth of cities ; youth that has lived the life of industrialism under present conditions, and as a result, is weak, pale, and emaciated. These boys, after three months out-of-door work, become bronzed, hardened, and robust, changing in so short a space of time, their entire physique and giving promise of a trend toward physical perfection.

PAUL, JULIUS MOBIUS.

The unexpected death of Professor Mobius of Leipsig is announced in the German journals. Though his name is not particularly well known in this country, yet he occupied a position in contemporary psychiatry, that makes mention of him fitting in this place. Very few men have had quite the same influence that he has had. Though not a teacher nor a significant personality in University circles, as commonly understood in this country, he has managed to make his impress on medical literature in a remarkable way. Many who have enjoyed and profited by his writings appreciate the universal quality of his literary achievements and will be conscious that a wise personality has been lost to them. To those who admired and understood Mobius he represented less the accomplished neurologist or psychiatrist than that rare being, a cultured man and a cultivated scholar who wrote many things about neurology and psychiatry. The distinction is obvious to those

who would see the literature of medicine conform to the best traditions of good literary form.

One of the most significant phases of Mobius' activity was the effort he made to show the necessity of a broader interest for the psychiatrist. He insisted that the walls of an asylum should not be the limit of the psychiatrist's outlook. He emphasized the idea that a physician who desired to know something about the abnormal mind should first know something of the normal mind. He pleaded for a psychiatrist who lived among his fellow-men, shared their responsibilities, took part in their pleasures, bringing to their special work, as a consequence, that sense of proportion, that tincture of humor, and that avoidance of dogmatism which are some of the chief fruits of human fellowship.

Mobius himself was no "Asylum Man," using a term that is frequently heard as descriptive of a superintendent of an insane asylum. At the same time he concerned himself largely, at one period of his life, with the problem of asylum management, its place in the community and its service to medicine in general. The development of the insane institutions in Germany owes much to the impetus which he gave toward a more modern conception of their utility. Especially were his efforts directed toward the education of a better equipped type of psychiatrist. He believed that the psychiatrist, by virtue of his special work, should be the very highest example of a physician, because he held that the human mind represented the most important problem both from a normal and an abnormal point of view, that human activity was called upon to solve. His interest in philosophy was an ever active one. Its discipline appealed to his analytic mind as particularly fitted for those whose work was concerned with the insane. Of late years he was attracted by the evidence of pathological mental states in the lives of some of the famous men of the world; some of its musicians, poets and literary figures appealed to him as legitimate objects of research. These studies in biography are full of interest and the keen analyses of the lives so investigated form a valuable document for the student of the abnormal psychology.

A series of studies in the sexual differences of man and woman are of the utmost interest. Especially to be mentioned is the one treating of the physiological weakmindedness of women. This paper attracted great attention in Germany and went through many editions. Though its conclusions are by no means accepted yet, it forms in a certain sense a type of work of this kind representing a method of investigation which is illustrative of the man. One regrets that Mobius departed from the field of his earlier activity where his keen sense of values and his courage might have accomplished so much more.

In 1899 he wrote the following, in concluding a monograph on insane asylums. Perhaps they represent the finest ideal of a psychiatrist's activity that have been written;

"If the psychiatrist is to fulfill his whole duty he should be a stranger to no part of mental life. He should be familiar with the conditions of mental health in all its variations. As the hygienist knows or ought to know, all trade conditions and factory surroundings, and all the factors that make for healthy living, so must the psychiatrist know those of normal thinking. As a result of this attitude psychiatry will become the mistress where it is now the maid of all work. Then it will develop, as the nature of its special activity warrants. The psychiatrist will be a judge of all human things, a teacher to the jurist and the theologian and a leader among literary men and historians..

The death of Mobius makes these words particularly fitting as an index of the manner of man he was and as emphasizing that idealism has its proper place in so material a profession as that of medicine. Perhaps his chief claim to be remembered lies in the spirit that made expression of these words.

CHARLES LEVER.

That very gracious figure in literature, Charles Lever, is the recipient of fresh attention in Edmund Downey's "Charles Lever: His Life in His Letters," recently published by Wm. Blackwood & Sons. This may seem but a simple announcement, but a careful perusal of the work will show of what importance this comprehensive life is to him, whom we are pleased to call "the busy general practitioner." Charles Lever was a sorely-tried physician some years before he took up literature as a profession; but during his most arduous labors, especially at Kilrush, County Clare, when Asiatic cholera almost devastated that part of Ireland, the buoyancy of his spirits never forsook him. As his biographer says, "notwithstanding the gloom which pervaded the district, the young doctor contrived somehow to infect it with a little of his own high spirits. Physicians who worked with him through the awful time declared that wherever Lever went he won all hearts by his kindness, and kept up the spirits of the inhabitants by his cheerfulness. Some of his associates were driven to account for his wondrous exuberance, even after he had been sitting up night after night, by supposing that he was 'excited in some unknown and unnatural manner.'"

Although the whole book is the sort a physician should refer to when a fresh impetus for better work is necessary, there are parts which attract more than others, the most interesting chapter being that in which the Log-Book of a Rambler is printed. This account of his wanderings in Germany was written by Lever in 1827-30, the principal part being printed at intervals in "The Dublin Literary Gazette" during the year 1830, but given in toto for the first time in the present biography. Germany has made many strides, scientifically speaking, since then, but the social cus-

toms of to-day are not unlike what obtained in 1828. Life in Göttingen, as Lever saw it through his literary spectacles, was as crude then as it is now, and though he dwells on the barbarism of duelling and the arrogant attitude of the students to the bourgeois shop-keepers, he also notes the brighter side of student life, the brotherhood that existed; just as we, with our American tendencies, would be compelled to do to-day.

Blumenbach is described as "a small and venerable-looking old man, with a quantity of white hair floating in careless profusion upon his neck and shoulders. His head, which was almost preternaturally large, was surmounted by a green velvet cap placed a little on one side; he was grotesquely enveloped in a species of fur cloak with large sleeves, and altogether presented the most extraordinary figure I had ever seen."

These are but a few quotations to show what manner of book this is, but the medical reader cannot be laggard in his appreciation, for even our meager extracts, showing a lightness of touch, will undoubtedly prejudice him for it. We say this without hesitancy because of our knowledge of the many dreary books doctors read when their readings take them outside the realm of medicine. Modern books, too often, have the tang of psychology, psychiatry and moral pathology; they are weak reflections of that hospital life which is part of the physician's daily grind. They depress instead of buoy up; they may be life, as the literary artist seeking for the undiscovered may crave for, but to him who is innured to the real, unpoetical phases of the abnormal, they are an iterated weariness.

We cannot read all Charles Lever's novels to-day; much leisure is needed for so gigantic a performance. We make bold to state this for his works number some thirty. But even though some of us may read or have read Charles O'Malley and Harry Lorrequer and others, our profit will not be as great as a slow journey through the two volumes before us, for in the comparatively short space of 600 pages, we get a "selbst-porträt" of a lovable character; such a character as makes for the lasting success of a splendid optimism.

NAPOLÉON AS SEEN BY A PSYCHIATRIST.

Although the world is a bit weary of the many controversies that have raged around the glittering personality of Napoleon Bonaparte, complete cessation of the turmoil seems as far distant to-day as it was some twenty years ago. We have had critics, rather small than large, tell us that Napoleon lost the battle of Waterloo because of hemorrhoids preventing his sitting his horse gracefully and comfortably. Others have dwelt on his outbreaks of temper, his epileptic seizures, his uncontrollable passion for women (Masson's *Napoleon et les femmes*), his prodigious vanity (Masson's *Napoleon chez lui*), his gentleness, his probity, his honesty, his martyrdom (Lord Rosebery's *Napoleon: The Last Phase*), but it has

remained for Dr. A. N. Ellis, of Maysville, Ky., formerly assistant physician Longview Asylum, to declare, through the medium of the *Lancet-Clinic* (Cincinnati), that the Man of Destiny was "insane during the last dozen years of his life;" that is to say, directly or shortly after his interview at Tilsit, July 7th 1807, with the Emperor of Russia.

The learned doctor does not say why the change in Napoleon's character took place there and then, but states as an incontrovertible fact that it did, which certainly ought to be convincing enough to anyone acquainted only with the first principles of deductive philosophy. To quote the exact words of this remarkable contention, "a close study of his earlier years shows that he once embodied within himself many charming and lovable traits of mind and person—brave, studious, unselfish, exemplary in his private life and loyal to his duty, his family and his friends. After that meeting on the raft at Tilsit with the supreme ruler of all the Russias, at which time those two agreed to divide the world between them and from that time henceforth do just as they pleased, came dreams and hallucinations of universal empire, and then followed that complete change in his character to which I have already alluded. From one of the most polite and courteous of gentlemen, he became the most sullen, silent, crafty and morose of men. His manners became brusque, rude, overbearing, and his egotism transcendent, while at the same time his temper was so violent and capricious that no one of his courtiers could ever imagine what an hour would bring forth." Further on to support these many discreet words, the author's laxity in regard to historical facts makes him assert that "we need only speak of the wholesale murder of the 4,000 prisoners in front of Joppa, the poisoning and abandonment of his incurable plague-stricken in the hospitals of Saint Jean D'Acre, and the summary execution of the young Prince of Condé, to say that it was daily habit to do just such things, and that was all there was to it."

We regret that we and several hundred thousands of other people are in a position to enlighten the doctor as to his grave mistakes, for history tells us that only 1,200 mortals were murdered at Joppa and, par parenthesis, they didn't count for much, being only Turks; that the poisoning and abandoning of the plague-stricken at Saint Jean D'Acre occurred in 1799 and was forced upon Napoleon by the English general after he vainly tried for sixty-one days to capture the town, and that it was not the Prince of Condé but the Duke D'Enghien who was executed in 1804. All these occurrences took place before the "complete change" which Dr. A. N. Ellis considers the dividing line between Napoleon's unselfishness and loveliness, and egotism and craftiness.

After reading the article in question carefully and remembering Lord Rosebery's well-known book, we cannot help but think that perhaps the Czar was responsible for changing so weak a character as Napoleon's, and only when his baneful influence was removed did Napoleon get back his former character. We read a great deal, nowadays, about the ma-

chinations of the Russians, their astuteness in diplomacy, their Janus-facedness. Perhaps the Czar, seeing he had a weakling in hand, played the Russian character to a finish, and thus metamorphosed a sweet, smiling, gracious individual into a tyrant whose sanity is now doubted by so well-known a figure in the world of psychiatry as Dr. A. N. Ellis.

Psychiatry has done much to disturb the world's equilibrium. Even now that much-abused heroine of Ibsen's *Doll House*, Nora, has been brought before the "law" in "Ibsen's Nora vor dem Strafrichter und Psychiater," Von Staatsanwalt Dr. Erich Wulffen in Dresden (Carl Marhold, Halle a. S.). We had always looked upon Nora as a spoiled child, but not so Dr. Erich Wulffen in Dresden. According to his illuminating reasoning powers, she is hysteria writ large by Ibsen. Perhaps when Dr. A. N. Ellis reads of Nora's having been brought into a criminal court, his ambition will reach out to Napoleon and the world will be edified by a new exhibition of medicine being burlesqued to serve the purpose of a daring explorer in the realms of the abnormal.

LITERARY NOTES.

On January 1st the *Therapeutic Gazette* consolidated with the *Medical Age and Medicine*. The publication will continue under the editorship of Doctors Hobart A. Hare and Edward Martin.

The first number of the British Journal of Tuberculosis, edited by Dr. T. N. Kelynack, appeared on January 1st. The contents bespeak an excellent editorship and if the future numbers reach the standard evidenced by the initial issue, a long-felt want will be filled. Among the many interesting and instructive articles are; The Study of Tuberculosis: A Retrospect, by Professor Clifford Allbutt; Tuberculosis and National Efficiency, by Sir Lauder Brunton, and Climate as a Factor in the Treatment of Tuberculosis, by Sir Hermann Weber.

The title of the pioneer military medical journal in the English language, the *Journal of the Association of Military Surgeons*, was changed with the January issue to the *Military Surgeon*, retaining the old name as a subsidiary title. This journal, during its six years' existence, has built up a large following, and there is no reason why its prosperity should not continue. Military medical literature is as important as any other branch of medicine, for its field is well-nigh limitless. Major James Evelyn Pilcher is still secretary and editor, and associated with him are names whose reputation in military medical circles is such that any journal bearing them could pass muster.

ORIGINAL ARTICLES.

A CONTRIBUTION TO THE STUDY OF HYDRONEPHROSIS.

BY ARTHUR TRACY CABOT, M. D., A. M., of Boston.

Surgeon to the Massachusetts General Hospital.

Much confusion still exists in the minds of the profession as to the relations of false and true hydronephrosis. This study of personal cases is offered as a contribution towards a right understanding of these wholly distinct and different conditions which closely resemble each other clinically.

In true hydronephrosis the sac which contains the fluid is the distended pelvis of the kidney and as the internal pressure increases, the parenchyma of the kidney becomes stretched and thinned, forming sometimes no inconsiderable part of the wall of the cavity.

In false hydronephrosis the fluid is contained in a sac outside the kidney.

The site of this collection of fluid exactly corresponds to the position of a hydronephrotic kidney and may lead to a mistaken diagnosis. So close is the similarity, in size, position, consistency and mobility that no case of traumatic hydronephrosis can be accepted as an instance of true hydronephrosis unless proved by dissection in operation or autopsy.

In the Boston Medical and Surgical Journal, February 22d, 1883, I reported a case of traumatic hydronephrosis which at the time I believed to be an example of true hydronephrosis brought about by some temporary stoppage of the ureter by blood clot or otherwise, due to the trauma. I wish now to review that case and to correct the mistake made in my original report of it.

Case I.—The patient was a boy of ten who three months before had fallen down stairs and immediately after had passed bloody urine. Following this accident a tumor formed in the left renal region, was several times aspirated and a urinous fluid obtained. As it constantly refilled after aspiration an incision was made into it. The cyst wall was found immediately beneath the muscles. "The finger passed into the cavity felt" what I described in my report as "a soft nodular mass, probably the kidney, in the posterior part of the cyst." Drainage was introduced and as the boy made a quick and complete recovery no further examination of the condition was possible.

I supposed, at the time, that the sac opened was a greatly dilated renal pelvis and that the kidney was felt from the inside, as it were. This explanation never fully satisfied me, for the mass which was in the proper

location for the kidney projected into an otherwise smooth-walled globular cavity; whereas in true hydronephrosis the distended kidney forms, as I have said, a part of the wall of the cavity and the only projections from it are the flattened papillæ and the walls separating the different calices which stand out and give that portion of the sac a multilocular arrangement.

Subsequent experience has convinced me that this mass was indeed the kidney (felt from the outside) which had been ruptured by the trauma and that the cavity which I took, at the time, for a greatly dilated renal pelvis was an extra renal cavity in which the urine was confined after its escape from a rent in the renal pelvis.

False hydronephrosis of this sort was not a well recognized condition at the time of my first experience with it. Since that time it has been somewhat investigated and is now better understood.

In many cases of renal contusion or rupture a tumor is to be felt occupying the site of the kidney and extending down well towards the brim of the pelvis. This tumor is produced by an effusion of blood about the kidney. When the laceration of the kidney opens its pelvis this effusion contains urine, as well as blood.

Writing in 1901 Morris says: "The most characteristic effect of rupture into the pelvis of the kidney is extravasation of urine. This takes place principally in the neighborhood of the kidney, forming with the blood a large retroperitoneal tumor, more especially where a free passage along the ureter is interfered with; under these circumstances a large cyst may develop with a smooth inner wall containing urine mingled with detritus of blood." In another place he says: "Such a tumor, whether a hæmato-nephrosis or a circumrenal extravasation, is rounded in form and slightly movable both from side to side and in the antero-posterior direction."

It is interesting, in our endeavor to understand these cases to study the anatomical conditions which confine this effusion about the kidney and prevent it from becoming diffused in the loose cellular space behind the peritoneum.

This post-peritoneal space is so loose and readily opened up that it might be expected, if urine and blood were poured freely into it, that they would quickly spread and form a diffused extravasation. In some cases of extreme violence this occurs, but usually the effused fluids are confined about the kidney in the form of a clearly defined tumor. This limitation of the effusion cannot reasonably be explained in all cases by the formation of a limiting wall of "inflammatory formation" (Morris) for it is observed in cases where the effusion is very rapid and a circum-renal tumor is apparent within a few hours of the injury. It is inconceivable that a strong limiting wall should form by inflammatory or other action so quickly.

This limitation of the effusion must then be due to the confining action of an already existing membrane.

My observation of cases, together with careful dissections, have convinced me that the wall of the cavity in these false hydronephroses is the fibrous outer wall of the so-called fat-capsule of the kidney.

This tough capsule plays an important and beneficent part in thus confining effusions about the kidney. When the effused fluid is urine, extensive urinary infiltration is prevented; while in cases of hæmorrhage from a ruptured kidney the blood presently fills this capsule tightly and by its own internal pressure brings the bleeding to a standstill.

The subsequent history of one of these cases will vary according as the effusion contains urine or not.

If the effusion consists of blood alone it will usually disappear by absorption. When absorption is slow, aspiration of the serous part of the hæmatoma may hasten its disappearance.

When the effusion contains urine it may form a false hydronephrosis such as I described above. Such a false hydronephrosis in which the fluid is mainly urine if not cured by one or two aspirations, as has not infrequently occurred, may be confidently expected to yield to a simple incision with drainage.

A mixed effusion of blood and urine may lead to suppuration and is pretty certain to do so if any inflammation exists in the kidney or its pelvis at the time of the accident.

In a healthy patient such a mixture of blood and urine may, however, disappear and cure itself.

The following case illustrates this condition:

Case II.—A young man while playing football was thrown against a wooden bench and suffered a severe contusion of the right loin. This was followed by hæmaturia and a tumor presently appeared in the right side which simulated a greatly enlarged kidney. It was elastic and somewhat tender to palpation.

I saw the patient in consultation with Dr. Chas. E. Abbott, of Andover, Mass., on about the third day after the accident. There was now an indistinct sense of fluctuation in the tumor. I introduced an aspirating needle and drew off seven or eight ounces of a watery fluid, dark purplish red in color. This did not reduce the size of the tumor materially, but it made it soft and flaccid. Aspiration was stopped by the plugging of the needle with old blood clot.

An examination of this fluid on the following day showed it to contain abundant urea, and to be evidently a mixture of urine and blood.

Supposing, at that time, that such an effusion of urine must necessarily lead to suppuration, I expected to receive a summons within a few days to open and drain the sac, but contrary to expectation the tumor steadily decreased in size and finally disappeared.

It is questionable whether this disappearance of the effusion is due entirely to absorption or whether drainage through the rent in the renal pelvis plays an important part in its removal.

Passing from this false hydronephrosis to true hydronephrosis I have an interesting observation to report in which both conditions, the false and the true co-existed in connection with one kidney.

Case III.—J. S. W. Jr., a well developed boy of 11 years, was seen by me March 20th, 1897, in consultation with Dr. E. H. Stevens, of Cambridge. His history was as follows:

Since the age of one and a half years he had had repeated attacks of severe abdominal pain. At first these came every week and lasted several hours. Gradually they became less frequent but were of longer duration. Presently it was noticed that a fullness appeared in the left loin with each attack and disappeared as the pain subsided. These attacks were usually accompanied by vomiting and by high fever.

The last previous attack was seven months ago and lasted about two weeks. Two weeks before I saw him he began to have pain in the left side and presently a tumor in that side was noticed. The pain was of moderate severity until four days ago, but since then it has been very severe. Two days ago Dr. Stevens aspirated the tumor and drew off eighteen ounces of fluid of specific gravity 1006 and containing urea.

The tumor rapidly refilled and when I saw the patient it was as tense as ever and the boy was suffering great pain. It extended well up under the ribs and downwards to the brim of the pelvis.

Operation was advised, and under ether we opened the tumor widely in the lumbar region. A large quantity (not measured) of bloody fluid escaped and it was then seen that the fluid was contained in a sac the wall of which seemed to be the outer layer of the fat-capsule; and at the bottom of this sac lay a collapsed hydronephrotic kidney with a rent in its wall three-quarters of an inch in length, which opened the kidney through the thin wall of one of the calices. This opening was enlarged and the finger, introduced, showed the whole kidney to be reduced to a thin walled sac with numerous irregular pockets.

An examination, as careful as could be made with a rather poor light, failed to show which pocket represented the pelvis and the ureter could not be made out.

The kidney was drawn up and sutured to the lumbar fasciæ in the hope of thus straightening the ureter, and the rent in the kidney was closed by a continuous cat gut suture.

For two days the boy was comfortable and then he began to have severe pain in the side and the swelling was found to have returned to almost the same size as before operation.

It was found that the tumor now was the greatly distended hydro-

nephrotic kidney, which had filled up tensely since the rent in its wall had been closed.

It presently became necessary to puncture the kidney and put in drainage. The wound soon healed down to the tube and with a bottle attached to a swathe to collect the urine he kept pretty comfortable for two years.

In March, 1899, he entered the Massachusetts General Hospital to have an operation for closure of the fistula. At this time he had about 3xxx of urine each day from the bladder and 3xx from the opening into the kidney.

The urine coming from the renal fistula was of very low specific gravity while that from the bladder was normal in character.

A nephrectomy was now done. When the ureter was reached it was found that just after leaving the pelvis it was looped over a little artery which ran direct from the aorta to the lower part of the kidney.

The wall of the ureter was very thin at the bend where it was caught up over this vessel and the calibre was so narrowed that the finest probe would not pass.

The operation was successfully completed, although the separation of the sac was difficult on account of firm adhesions.

The boy made a good recovery and has been perfectly well ever since.

This was properly a case of congenital hydronephrosis. Although the dilatation of the kidney did not make itself noticed until some years after birth, the condition that led to it was a congenital one.

It is an interesting speculation whether it was the assumption of the upright posture which, causing a downward sag in the kidney, tightened the loop of the ureter over the artery and caused an obstruction which had not shown itself during the horizontal life of the child.

Besides the last case in which a congenital obstruction of the ureter by looping over a vessel caused the hydronephrosis, I have seen one case of congenital hydronephrosis in which the obstruction seemed to be a valvular one at the junction of the ureter with the renal pelvis.

Case IV.—A poorly developed boy of four had had a swelling in the left lumbar region since birth. One month previously this tumor had been aspirated and urine had been obtained. It rapidly refilled again and the day before I saw the child he had suffered from pain in the abdomen followed by vomiting. The child was pale and anemic, with quick pulse and respiration rapid and superficial. The temperature had been considerably raised for some time.

When I saw him the abdomen was distended by a tumor which lying mostly to the left of the median line, extended out and filled the flank, reached well across the middle line, up under the ribs and down over the pelvis.

Fluctuation by wave was distinct over this tumor and its character,

its position and the previous aspiration of a urinous fluid from it made the diagnosis of hydronephrosis sure.

It was felt that the child was rapidly failing and that immediate interference was demanded. He was not strong enough for an extensive operation, consequently a nephrotomy was quickly done and drainage established.

In opening down to the sac a cavity was opened containing several ounces of chocolate colored fluid.

It was thought that this was due to leakage from the puncture made with the aspirating needle.

The sac was then opened and a large quantity of a similar chocolate colored fluid was evacuated. The interior of the cavity presented the sacculated appearance of a hydronephrotic sac in which no traces of the kidney could be made out at the time. Drainage tubes were introduced.

The child was much relieved by this operation and made a slow recovery.

A month and a half later the temperature which had remained irregular and somewhat raised since the operation fell to normal. The child seeming now in good condition, a nephrectomy was done and the hydronephrosis was enucleated and removed. The sac was quite adherent and the peritoneum was opened during the operation.

It was closed by a continuous cat gut suture and in no way complicated the result. The boy made a good recovery. The sac presented nothing peculiar. The upper end of the ureter made a nipple-shaped projection into the pelvis in such a way that it was quite clear it must have acted in a valvular manner to close the exit. The ureter was otherwise normal in size with no dilatations.

This case afforded a good illustration of the occasional benefit of a nephrotomy as preliminary to a nephrectomy.

Acquired Hydronephrosis.—The cases of hydronephrosis that I have met with have all of them resulted apparently from mobility of the kidney. I refer here to the cases of unilateral hydronephrosis appearing long after infancy, and I exclude many cases of distention of the kidney in which the contained fluid has been purulent, also those in which both kidneys have been distended owing to obstruction in the lower urinary passages.

In a number of the cases that I have seen the distention of the kidney has been only moderate in degree and has disappeared under the influence of posture with raised hips and lowered shoulders. I have also seen manipulation greatly assist in the reduction of a kidney distended in this manner.

I have had two cases in which operation has brought about a cure of hydronephroses of considerable size in kidneys which showed mobility.

In neither of them could a distinct valve formation such as Fenger has described, be made out. The ureter was, in each case, found to be tortuous just below its emergence from the pelvis and the obstruction seemed to be due to a folding of it upon itself.

There was nothing to indicate which particular twist of the ureter had been the seat of the obstructive pressure. It is easy to see that an obstruction of this sort may act intermittently until the enlargement of the kidney is sufficient to cause a firm pressure against the kink and make the obstruction a permanent one.

In one of these cases intermittent attacks had been a marked feature. In the other, although the mobility of the kidney was very great, no history of intermittent pain or tumor could be obtained.

The point of especial interest in the two cases of this sort upon which I have operated is that the simple measure I adopted for straightening the ureter seems to have been efficient in restoring the permeability of the canal so that no subsequent filling up of the kidney occurred.

This measure was to insert a bougie through the ureter down beyond the portion that was tortuous.

In this way the various curves of the canal are effaced while the pelvis is contracting and pulling it into shape. Furthermore, and this is I believe most important, "a moderate amount of inflammation is set up in the walls of the ureter, which stiffens them, and attaches them to the parts about and thus tends to keep the form given to the tube." This explanation of the manner in which the bougie may accomplish the permanent correction of the obstructing condition, was first given by me in an account of my first case reported to the Surgical Section of the Suffolk District Medical Society in January, 1896.

This case was seen seven months later and at that time there was no sign of any refilling of the sac, showing that the potency of the ureter had been satisfactorily restored.

The second case only confirmed the good opinion I then formed; for the result has been most satisfactory and there is no sign of recurrence at the end of one and a half years.

I append to this article a brief report of these two cases. In both cases the kidney was fastened in the loin by stitches attaching it to the rib and the fascia.

The end of the bougie was brought out through the opening left for drainage, and it was removed at the end of three days. It was my intention in the second case to have kept it longer, but the bougie was so acted on by the urine that its surface showed a tendency to scale off and on this account it was removed earlier than had been intended.

This method of treatment is not presented as a substitute for plastic operations upon valves, for these have demonstrated their value in cases

of oblique implantations of the ureter upon the side of the pelvis and also in cases of nipple-like projection of the upper end of the ureter into the pelvis such as was found as a congenital condition in Case IV.

The use of the bougie, however, as I have described it, is of value in those cases where the seat of obstruction cannot be determined, owing to the multiplicity of twists in the ureter and the impossibility of telling at which bend the closure of the canal occurred.

Miss A., 32 years of age.—A thin, pale woman. Two years before she had first noticed an enlargement of the abdomen a little to the right of the median line, and in the past year had suffered considerably from abdominal pain, which had been almost constant and was noticed more for a week following catamenia. She had never noticed any symptoms in connection with urination.

Examination of the abdomen showed a large, fluctuating mass, which when lying on her back, lay on the right side, extending up well under the liver and extending down to the brim of the pelvis. When she stood up this mass rested across the lower part of the abdomen, just above the pelvis, and the region about the neighborhood of the liver was then empty.

The catamenial history led to the diagnosis of ovarian cyst, but the position of the tumor when she was on her back, strongly suggested a hydronephrotic kidney. Examination of the urine was wholly negative. The great mobility of the tumor made it seem probable that if it were the kidney it had a long meso-nephron, and there was danger that a puncture in the loin might traverse the peritoneal cavity. We therefore thought it wiser to explore by an abdominal incision, which was done March 29th, 1895.

The tumor was found to be a large hydronephrotic kidney, which was extremely movable as had appeared by previous examination. With the hand in the abdomen guiding the aspiration, a needle was introduced through the loin and the sac entirely emptied. The abdominal wound was then closed. This operation was followed by no reaction, and the patient made a good recovery.

The examination of the fluid drawn gave the following result: It was of a pale, amber color, with a specific gravity of 1.007, and having a slight trace of albumin. The sediment consisted of brown, granular cells with occasional granular and fibrinous cylinders, like renal casts. The examination for urea showed that the fluid contained 1.01 per cent.

For at least a fortnight there was no sign of any refilling of the cyst, but at the end of that time the tumor began to be noticeable in the loin. Examination of the urine soon after the operation gave a specific gravity of 1.020, a slight trace of albumin. In the sediment hyaline and granular casts, with fat adherent.

The patient was in a rather feeble condition during her convalescence, with edema of the ankles, which postponed further operative treatment. On May 7th, her condition being then pretty good, the kidney was opened in the loin, and after it was emptied the ureter could be seen emerging from the cyst by a funnel-shaped opening and running a tortuous course downward towards the pelvis. There was no valvular appearance to the opening of the ureter, nor any condition which could be corrected by incision or other alteration of that orifice.

The mechanical condition which had led to the hydronephrosis appeared to be a twisting of the ureter at some point in its tortuous course, that point not being determinable after the sac was emptied and the parts were lax. It being desirable, therefore, to efface, as far as possible, all of these abnormal twists and turns in the ureter, a gum-elastic bougie, about No. 6, French, was introduced and carried with some difficulty down through the ureter until it reached the neighborhood of the bladder. The sac was sewed to the edges of the wound through the muscles with continuous catgut. A drainage-tube was then introduced into the pelvis of the kidney, and the bougie was left in situ.

The recovery was rather slow, but, as far as the healing of the wound went, was uneventful. The bougie was removed at the end of three-and-a-half days, and the drainage-tube was cut in nineteen days.

This patient was seen seven months later and, although there had been at times some discomfort in the abdomen, there was no sign of any filling up of the kidney.

Mrs. B., 54 years of age, was brought to me in May, 1905, by Dr. G. C. Smith, of Boston.

The patient gave a history of pelvic and low abdominal pain intermittently during middle life. This had ceased five years previously, at the time of the menopause.

For some (uncertain number) years has had attacks of pain in epigastrium accompanied by nausea and vomiting, with some chilly sensations. In the past year these attacks have come more frequently (once in five weeks), but have been somewhat less severe than formerly.

There is, at times, some sense of discomfort in the right side and down the leg.

There has been no noticed disturbance of urination nor have there been any symptoms referable to the bowels.

Examination of the patient showed an elastic mass in the right side of the abdomen close below the liver. This mass was pushed downward by inspiration and could then be held down by the fingers thrust in above it so that it did not rise on expiration, but left a space between it and the liver.

The diagnosis of hydronephrosis was made and an operation advised. This was done on June 15th, 1905.

A lumbar incision was made along Israel's line and on reaching the kidney it was seen that the pelvis was greatly distended with the body of the kidney above it.

A trocar drew over a pint of pale, clear urine. The sac was then incised and the opening into the ureter was found. No valvular condition was found and a urethral bougie about No. 12 French size was passed down to the bladder without encountering any resistance.

This bougie was left in situ, a drainage tube was placed in the sac, alongside of it, and the opening was closed down about them with a continuous cat gut suture.

The kidney was then fastened to the fascia and to the lower rib with Pagenstecher sutures placed after Guyon's method.

The patient made a good recovery, the bougie being removed from the ureter on the third day.

A comparative examination of the urines during convalescence was of some interest as indication of the functional activity of the hydronephrotic kidney.

The urine drawn from the sac at operation showed a specific gravity of 1006, no albumin, and a rare granular cast.

Two days later the specific gravity of the urine from the nephrotomy tube had risen to 1012, while the urine from the bladder had specific gravity of 1019. Three days later they were, from nephrotomy, 1009, from bladder, 1011. Four days later, from nephrotomy, 1008, from bladder, 1010.

The quantity of urine from the hydronephrotic kidney was very nearly the same as from the other, showing that its functional activity was but little impaired.

The patient made a good recovery. One year later she wrote me that she had had since the operation four attacks of epigastric pain similar to those before. She said, however, that the tumor in the side had not reappeared in connection with these attacks. She expressed herself as feeling well and said that she had gained twenty pounds in weight during the year.

This patient was seen eighteen months after operation. She had at this time been more than six months free from any discomfort whatever. There was no sign of any enlargement of the kidney and she weighed thirty pounds more than at the time of operation.

PSYCOTHERAPY.

By M. A. BLISS, M. D., St. Louis.

Since the beginning of time the influence of the mind over the body has been recognized and utilized in the cure of both bodily and mental disease. Within very recent years the subject has been studied with extreme care by some of the foremost students of the time, and there is now in course of development a systemized and exact method of the application of this powerful means of help to many sufferers.

Within very recent time Dubois of Berne has, perhaps, written most fully and helpfully, as well as optimistically, on this subject. Oppenheim's "Psycho-Therapeutische Briefe" have thrown additional light and suggested, perhaps, a useful system more adapted to the needs of those of us less skilled in the art.

We are all so familiar with the influence of the personality of certain physicians that it would be a trite and commonplace recital to multiply instances. An illustration was afforded me recently when a young lady in speaking of her physician, a successful internist, exclaimed ecstatically, "why, when he shakes hands with you, you are half way cured."

Psycho-therapeutics, in its present development, contemplates a different method from the ordinary "jolly" so freely dispensed by the "medicine man," and which falls into some shadows because of its free use by unscrupulous quacks and charlatans as well as by very misguided, if earnest and well meaning scientist healers, etc. It bases its efficacy on a re-education of the reason after a full examination has disclosed as nearly as possible the exact state of the patient physically and mentally, and must be differentiated from our usual conception of suggestion in that we carefully eliminate any mystery or means, the nature of which the patient cannot comprehend. Even the prescription, which is the thing the patient thinks of greatest importance, is most frequently omitted.

It should be kept in mind that psycho-therapy finds its largest application in the psycho-neuroses; that it contemplates exact and complete physical examination and, if possible, diagnosis; that the well known remedies of the pharmacopea are not discarded when there is a clear indication for their use, and the same is true of such surgical procedures as may be necessary. Its claim to attention in its present development is that we shall not leave what help may be derived from it to the accidental remarks of the more or less kind-hearted physician who seeks to alleviate obvious mental distress by comforting assurances, though immense good has been done in this way, but by a clear and constant recognition of its power to synergize all other means and sometimes to cure in spite of them. It is a method which can be used to more or less advantage under any environ-

ment, but it is often necessary, on account of the home surroundings of the patient, to carry out the plan in the way suggested by Weir Mitchell—with a rest cure, then all unfavorable influences may be checked.

To explain to the patient the mechanism of the plan it is my custom to call attention to a series of physiological effects of the emotions. The blushing which comes from pleasure or embarrassment, the paleness of fear, the activity of the salivary glands under the influence of anticipated gastronomic indulgence, the dryness of the mouth of the embarrassed speaker. One may elaborate in this way until the interest in physiological processes is aroused and it becomes apparent how the function of nearly every organ is modified by the nature of the stream of thought. Beaumont's observations on the stomach of St. Martin, especially that the thought of certain foods welcome to his palate aroused the flow of the juices of the stomach, shows how the nutrition can be helped or hindered in its very portal into the body. A clear word picture of one under the influence of courage, hope and confidence, the bright eyes, warm surface, moist mouth, the muscular activity, contrasted with the cold surface, dull expression and sluggishness of fear, despair, grief and hopelessness, brings one to a realization that it does not matter whether there is a valid reason for these emotions or not their influence on the functions is the same. And does it not frequently happen that one picture may be transformed into the other by a sudden turn of fate? It is frequently the very small things of life which bring about these emotions in those unstable unfortunates who may be listed among the psychoneurotics. But when we reflect upon it we find that we are all subject to some exaggeration in our reaction to the pin pricks of life.

That we all must learn a stoicism which protects us like an armor, is apparent whether it has come unconsciously or by steady effort. As the Spartans taught their children to endure physical pain that they might bear the wounds received in battles to be fought in later life with stoical bravery, so must the physician teach his patient to endure with equanimity the pain which is of mental origin and which is so largely modified and often removed by explanations dispelling fear. And it is well, too, if we may begin as the Spartans, with the children, for who has not seen the seeds of future nervousness sown and cultivated by the over solicitous and indulgent parents of children whose heredity may have handicapped them, but in whom a robust view of life is possible of cultivation by proper moral training.

We call attention to the expenditure of force made through the various emotions, which the patient dimly realizes and we plead for the application of this force to some useful end. The beneficial effect of a "work cure" is from applying less force to the work than to the worry it displaces, thereby creating a reserve.

A long and friendly conference will often disclose the leaks which are draining the strength and vitality of the patient and the attention called to them together with an explanation of how tissues are used up and repaired will accomplish a step toward correction. Oppenheim reinforces and multiplies the effect of a personal conversation by means of what he calls psycho-therapeutic letters. These are written for patients who are visiting him daily as well as for those whom he sees less frequently, or may be departing from his care. It may be well to quote one and then to comment on its features.

"MY DEAR GENERAL:

"I believe it will be advantageous to you to explain further by letter the subject of our conversation of yesterday, especially so, since I could see from the expression on your face, that you went away scarcely convinced.

"A prominent physician, one for whom I have the highest regard, has asserted that all of your symptoms, and especially the vertigo, depends upon a calcareous deposit in your arteries.

"You, my dear general, have seen in this statement your death warrant, since it explains all the sufferings and fears which torture you. After the most careful examination I can say to you with the fullest conviction, that your fears are groundless.

"You yourself are so well versed in science, that I feel I can discuss the question with you as I would with a colleague. The fact is well known that under the present condition, that is, when a man of your age complains of vertigo, one must think first of all of calcification of the arteries as a cause for it, because it forms the usual senile change and vertigo is the most common symptom. But, leaving aside the fact, that the vertigo of arterial disease is often a temporary thing and in no sense always a serious symptom it is very wrong to interpret the symptom, appearing in old age without further question and without further proof, as a direct result of arterial calcification. This sort of thing is in my opinion too often done and frequently to the disadvantage of the patient. First of all it is necessary to study and to analyze the symptoms carefully. I will not here go into the question of the many different forms of vertigo nor of their manifold origin, but confine myself to your own case.

"Two years ago, following overloading of the stomach, you had a real attack of vertigo, which was repeated many times during the day, until through vomiting and purging, the contents of the stomach were gotten rid of. Since that time, the fear of vertigo has taken hold of you. It is not a rare thing nor a new thing in my experience, to see a man, who has shown his fearlessness and indifference to death, in countless battles, a hero in fact, in the face of fear of a disease, act contrary to his whole character.

"The remembrance of that attack of vertigo is so vivid in your mind, that the idea alone is sufficient to arouse in you the symptom, or at least so similar a phenomenon that it approaches very closely the original. That this explanation is correct is shown clearly by analyzing the symptom. You confess that at home you have positively no vertigo at all; as soon as you leave the house, especially when you are alone on the street, far from home, the memory of the attack of vertigo makes you so anxious that you have a feeling of weakness and dizziness, consequently you are compelled to struggle to hold yourself firm. Thus the hero von X. sits at home in his easy chair like a frightened woman, and embitters himself and his surroundings. Even if I found in your case evidence of arterial calcification, I would be in doubt whether it was the cause of your vertigo, or whether it was not a memory vertigo, an anxiety vertigo. I can assure you that change in your arteries is not more than is consistent with your years, and that your heart and arterial system can reach old age free from symptoms. Now, you must brace up. I will call for you myself in the morning to go walking and I am sure that in a few weeks you will walk about free from vertigo.' (This happened.)

To a patient with tabes he wrote:

"Since you have already learned it from other sources, I cannot hide from you that you show the early symptoms of a spinal cord disease. This statement of mine does not by any means indicate, as you have feared, that it is the beginning of the end. You have no reason to despair. We physicians are proud of the fact, and believe it to be an indication of the progress of medicine, that we are able to diagnose disease of this kind in its very earliest stage. This means a great advantage to the patient, because a conscientious and well informed physician, basing his methods on this knowledge can so regulate his patient's life and can make use of such therapeutic measures, that the progress of the disease, at least, can be arrested or the development of the disease can be delayed. These measures can and should be advanced without the patient being aware of the disease that has attacked him. Because the idea of the nature of this disease, prevalent among the laity, and for that matter among doctors of the old school, arose from the picture of the advanced and well developed cases and it was only in such advanced stages that the disease has been heretofore recognized, when the symptoms were so prominent that they would impress even those who knew nothing about it. This sad picture is rendered even more tragic by all the hopelessness and helplessness with which the lay imagination has surrounded the idea of spinal cord disease.

"We neurologists, however, know that this disease very often runs a mild course; that a man, who to-day presents certain early symptoms of this disease can be active and enjoy life for 10 to 25 years. For a man,

say 30 to 40 years, this gives a normal period of activity. What disturbance of happiness; what a sad outlook for the future would the knowledge of the possession of this disease bring if it were not known that there is a form in which the progress is slow and the disease itself benign in character.

"In such cases the victim of disease, experiences impressions, worry and fear, expecting every day a new symptom or an increase in the severity of existing symptoms; in such a state of mind he lives out his life. I have often observed with this very anxious and expectant state of excitement comes a condition of nervousness and a state of depression, which in their seriousness are of much greater importance than the cord disease which cause them. From this I beg to warn you. This course I would strongly impress upon you. Do not look upon yourself as one who is lost; as one who has become the victim of a progressive and incurable disease; as one who will be early paralyzed. I can give you from my own experience the assurance that your physical condition in 10 years need not be different from what it is now. Just as positively must I say that you make use of all the preventive measures which I have to give you, that you must give up all such unusual exertion and pleasure which only one in the most vigorous state of health dare undertake.

"I counsel you first of all, that once a year you undergo an examination at the hands of a physician who is expert in such matters. With best exceptions you should conduct as a normal individual and you should think of yourself as such, remaining true to your profession and not withdrawing from the pleasures of social intercourse.

"With the hope that my advice will be as valuable to you as it has been to many others who have your trouble."

He has determined by intimate conversations the patient's weak points, and he sets about quite calmly and deliberately to give an antidote to fear, to stir up pride, courage and endurance, to dissipate false beliefs, to explain away the exaggerations of possibly trifling disorders. The patient may read the letter once or twenty times a day, each time gaining periods of placidness which, even if of short duration, allow the nutritive functions to gain a little headway. The letter method of continuing a helpful relationship between physician and patient when separated by distance, has perhaps always been used, but this plan does not consider distance and its efficacy is great in proportion to the skill with which the letters are prepared. I find such letters require a great deal of thoughtful care. It has often happened that my patient has hastened a reply, pleading for explanation of some statement I let creep in which gave alarm, or they had read a sinister meaning "between the lines." It is well to read over one's efforts several times, making necessary corrections, for it must be remembered that these letters are intended to be indelibly imprinted on the patient's mind.

We do not work long in this field before discovering its great difficulties. Mastery of the art requires many of the factors required to master any of the arts—original capacity, a fondness for the pursuit, an inexhaustible optimism, an untiring determination to succeed. One may not hope, unless he be one of the accidents of nature—a genius—to be a successful psychotherapist without cultivation, with any greater chance of success than he would meet in an attempt to play a difficult musical instrument or paint an acceptable picture. Successful work cannot be done while watching the clock. Time must, in a great measure, be forgotten. The physician himself should strive to stand as an example of the beneficent influence of the principles he attempts to teach.

Impatience and irritability have no place in this work. Mistakes are easily made and one must ever be on the alert to avoid them. We must many times be content to modify the mentality to a degree compatible with ordinary family existence, and success here, though partial, should be accepted thankfully. Absolute specifics are rare in the healing art.

How often does it happen that we fall short of ideal results in the application of any of the measures well known in medicine and surgery? Modern psychotherapy lays no claim to be a panacea, though its influence can be verified in widely varying conditions. Though only in process of development it furnishes a means of palliation, or of cure, for certain very painful and frequent disorders and is a valuable addition to our list of potent remedies. How potent will largely depend on the skill, the patience, the perseverance, the courage and the optimism of the doctor.

Mrs. S., 36—2 children, wife of teamster, lived in a tenement on North Market Street. For months she had a recurring sense of oppression in the precordial region. She called a physician, who examined her heart and left her with the impression that it was much impaired. Finally she remained in bed and fearing that even the utterance of a word would bring immediate disaster, remained dumb. For six months she was in bed and did not speak one word, indicating her wants by signs with the right hand. A table at the bedside was covered with bottles and boxes of medicine. Her husband did the housework after his own fashion with the aid of two small children who badly needed a mother's care.

Examination disclosed no heart lesion. Glove and stocking anesthesia generally increased deep reflexes, no abnormal reflexes. Anxiety was marked. After careful examination she was assured the heart was not diseased. That she could speak without danger. After a quarter of an hour she was induced to say one word, "No." A spasmodic movement of the left chest took place. Later she was induced to say "Yes," when less movement occurred. She was seen again in a week and the nature of her trouble explained carefully and at length. She then got up, gradually returned to her ordinary duties and has since remained well, a period of

six or eight months. She was seen four or five times at intervals of a week and each time assured of her safety. No medicine was given.

C., age about 45, single.—Recurrent attacks of vomiting which at first arose apparently from fatigue or some emotional cause, but which became so frequent that she was greatly emaciated and very weak. A diagnosis of stenosis of pylorus was made and a gastro-enterostomy was done. Improvement occurred, but in a few months the same state returned. Another gastro-enterostomy was done. Another period of improvement was followed by a recurrence of all the old symptoms. She would be stretched out on her bed vomiting everything, and quite resigned to die. She would declare there must be a cancer of the intestine and would picture the inflammation vividly. It repeatedly happened that a strong assurance that there was no cancer, nor any inflammation, resulted in having her up again in a few days, retaining food and gaining strength and attending her duties. The attacks have lessened in frequency and are now of rare occurrence and always manageable by what may be called a pure psychotherapy.

"RESURRECTION DAYS."*

BY MORTIMER FRANK, M. D., B. S., Chicago, Ill.

Mr. Chairman and Members of the St. Louis Medical History Club: I appreciate very highly the privilege and honor of being invited to address you this evening, and trust that the subject I have chosen will prove as interesting to you as it has to me.

The thrilling times known as "Resurrection Days" marked the difficult progress of the study of anatomy in England and Scotland, but after the passage of the Warburton Anatomy Act in 1832, bodies ceased to be scarce and body-snatching, which was systematically engaged in, was gradually abandoned. Previously the only recognized legal supply of subjects for dissection was what the gallows provided.

In 1540 a law was enacted in England allowing the Company of Barbers and Surgeons to have yearly the bodies of four criminals to dissect, and so the teaching of anatomy in England was jealously guarded by that corporate body for over one hundred and seventy-five years. Private anatomies were forbidden by the company, and as late as 1714 William Cheselden was reprimanded for holding anatomical demonstrations in his own home; these having been introduced by Brissiere, a French refugee and a surgeon of renown during Queen Anne's reign. Soon after this date, however, we find private schools of anatomy being established in London.

*Read by invitation before the St. Louis Medical History Club, Sept. 27, 1906.

With the rise and competition of the several anatomical schools, the difficulty of obtaining adequate material increased. The absolute necessity of having a good supply of bodies for the use of students, so as to prevent them from going to rival schools, caused high prices to be paid and made it worth while for a certain class of men to devote themselves to this nefarious traffic. Professional body-snatchers were human ghouls, thieves of the lowest grade and the most desperate and abandoned class of the community, who robbed the dead for gain. Their work was well paid, but perilous to life, on account of public hatred, and a more depraved class of men did not exist. The men usually worked in gangs and competition was keen amongst them. They would do anything to spoil the success of their opponents. The "resurrection-man" was in a position to do much harm, and he had many ways of doing it. If any independence was shown by the teachers and the demands of the gang refused, victory usually fell to their lot. If a body was brought to the dissecting room by anyone outside of their number, they would break into the room and mutilate the cadaver in such a manner as to make it useless for dissecting purposes. If this could not be done, the police were notified that a certain dissecting room contained a stolen body. Joshua Brookes, who had incurred the displeasure of these men, was a victim. At one time, because he refused a *douceur* at the beginning of the session, he awoke one morning to find two badly decomposed bodies close to his school. Two young ladies stumbled over one of them and complained to the police, and public indignation ran high against him for a time. On another occasion a body was brought to him in a sack and paid for at once. Soon after, upon investigation, the subject was found to be alive, and in all probability introduced into the house for purposes of burglary. Not only were the "resurrection-men" not satisfied with a *douceur*, but at the end of the session demanded "finishing-money."

For a time these men of ill-fame reigned supreme, exacting almost any price they chose to ask. If any demur was made, they stopped the supplies, and then the medical students became angry, held indignation meetings, sent deputations to their teachers, sometimes asserting that their lectures were not as active or as liberal as those of some rival school, and threatening to leave *en masse*. Thus the lecturers were in a manner forced to pay more for their subjects than they could receive from their pupils for dissecting them. The expenses, moreover, did not end here, for when the regular "resurrection-men" got into trouble, the surgeons had to make great exertions in their behalf, and often advanced large sums to defend them, or to keep them and their families during imprisonment. The teachers formed themselves for a time into an anatomical club for their own protection, but their agreements were not faithfully kept, and so with new schools springing up and compe-

tition keener, the teachers were as much as ever in the hands of the “resurrection-men.” In London, under the leadership of Sir Astley Cooper, the violation of graves had become a horrible trade. For the defence of these men Cooper spent hundreds of pounds. One of his accounts includes fourteen pounds, seven shillings, for half the expenses of going down and bailing Vaughan at Yarmouth, thirteen pounds for Vaughan’s support during twenty-six weeks’ imprisonment, six shillings to Vaughan’s wife, forty pounds and eight shillings for four subjects, paid to Murphy, and six guineas “finishing money” to three men at the end of the session.

The high prices paid led some people to offer their bodies before death, and Sir Astley’s brief answer to one offer from a third party



FIG. 1.—Surgeons’ Hall, Lincoln Inn Fields, from a print published in 1817. Here the bodies of Bishop and Williams were taken after execution at Newgate.

asking to know the truth, is preserved amongst his papers at the Royal College of Surgeons of England. The letter in question was: “Sir—I have been informed you are in the habit of purchasing bodys and allowing the person a sum weekly; knowing a poor woman that is desirous of doing so, I have taken the liberty of calling to know the truth. I remain, Your humble servant.”

On the back Sir Astley wrote: “The truth is that you deserve to be hanged for such an unfeeling offer.—A. C.” But under other circumstances, when the obtaining of the corpse of a person who had died of an operation, interesting to the surgeon, was in question, Sir Astley paid large sums. Thus his accounts for 1820 show the following entries in regard to obtaining the body of a man on whom he had oper-

ated twenty-four years before: "Coach for two there and back, £3, 12s.; guards and coachmen, 6s.; expenses for two days, £1, 14s., 6d.; carriage of subject and porter, 12s., 6d.; subject, £7, 7s.; total, £13, 12s."

This body was to be obtained, we read, "cost what it may." It is no wonder, then, that of Sir Astley it might be said, that no man knew of so much of the habits, the crimes, and the few good qualities of the "resurrection-men." He could obtain any subjects he pleased, however



FIG. 2.—Barber Surgeons' Hall from an old print published in 1828, where the bodies of executed criminals were legally brought for dissection.

guarded, and indeed offered to do so. No one could go farther than he did before a committee of the House of Commons, to whom he plainly avowed: "There is no person, let his situation in life be what it may, whom, if I were disposed to dissect, I could not obtain. The law only enhances the price, and does not prevent the exhumation."

It must not be supposed that all the bodies which were supplied to the schools were disinterred. Many of them were stolen or procured by false pretenses before burial, and that some bodies were obtained by

murder there can be no doubt. The exposure caused by the trials of Burke and Hare in Edinburgh, and Bishop and Williams in London, substantiates this. The ranks of the “resurrection-men” were largely recruited from the custodians of cemeteries who had lost their positions. The slightest vigilance on their part would have made it impossible for the “resurrection-men” to have spent the time necessary for their labor without detection. The work was not done entirely by men, for several of the tricks used could more properly be carried out by women. Spring guns were set in many of the cemeteries to prevent the depredations of the “resurrection-men,” but were often rendered harmless. If a certain grave was to be robbed in the evening, the sorrowing mother or bereaved widow would walk around the newly-made grave late in the afternoon and manage to detach the wire from the guns. Mort-safes or strong iron guards were sometimes placed over the grave, and in some cases iron coffins were used. The undertaker often arranged that the coffin fastenings were of an easy kind. Newspapers of the day contained advertisements of patent coffins, and Southey in his ballad, “The Surgeon’s Warning,” represents the fear of a dying surgeon buried in one of these, lest his apprentices should serve him after death as he had served others during his life.

* * * * *

All kinds of carcasses I have cut up,
And the judgment now must be!
But, brothers, I took care of you,
So pray take care of me!

I have made candles of infants’ fat,
The sextons have been my slaves,
I have bottled babes unborn, and dried
Hearts and livers from rifled graves.

And my ’prentices will surely come,
And carve me bone from bone,
And I, who have rifled the dead man’s grave,
Shall never rest in my own.

Bury me in lead when I am dead,
My brethren, I entreat,
And see the coffin weigh’d, I beg,
Lest the plumber should be a cheat.

And let it be solder’d closely down,
Strong as strong can be, I implore,
And put it in a patent coffin,
That I may rise no more.

If they carry me off in the patent coffin,
 Their labour will be in vain;
 Let the undertaker see it bought of the maker,
 Who lives in St. Martin's lane.

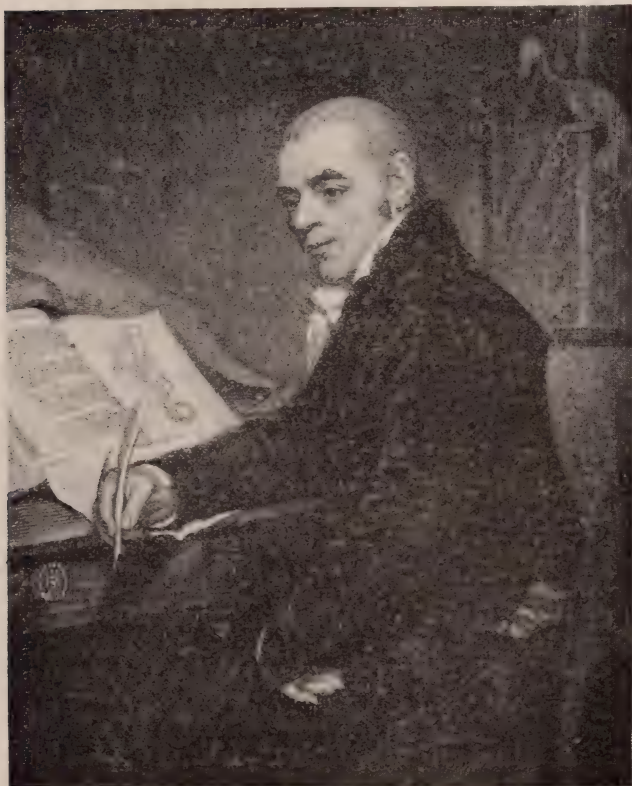
And bury me in my brother's church,
 For that will safer be,
 And I implore, lock the church door,
 And pray take care of the key.



FIG. 3.—William Cheselden who was reprimanded for holding private courses in anatomy.

And all night long let three stout men
 The vestry watch within,
 To each man give a gallon of beer
 And a keg of Holland's gin;
 Powder, and ball, and blunderbuss,
 To save me if he can,
 And eke five guineas if he shoot
 A resurrection man.

And let them watch me for three weeks,
My wretched corpse to save,
For then I think that I may stink
Enough to rest in my grave.



Joshua Brookes

FIG. 4.—Joshua Brookes who incurred the animosity of the "resurrection-men" on more than one occasion.

The surgeon laid him down in his bed,
His eyes grew deadly dim,
Short came his breath, and the struggle of death
Distorted every limb.

They put him in lead when he was dead,
 And shrouded up so neat,
 And they the leaden coffin weigh,
 Lest the plumber should be a cheat.

They had it solder'd closely down,
 And examined it o'er and o'er,
 And they put it in a patent coffin,
 That he might rise no more.

For to carry him off in a patent coffin
 Would, they thought, be but labor in vain,
 So the undertaker saw it bought of the maker
 Who lives by St. Martin's lane.

In his brother's church they buried him,
 That safer he might be,
 They lock'd the door, and would not trust
 The sexton with the key.

And three men in the vestry watch,
 To save him if they can,
 And should he come there to shoot, they swear
 A resurrection-man.

* * * * *

So all night long, by the vestry fire,
 They quaff'd their gin and ale,
 And they did drink, as you may think,
 And told full many a tale.

* * * * *

They look'd askance with greedy glance,
 The guineas they shone bright,
 For the sexton on the yellow fold
 Let fall his lantern light.

And he look'd sly, with his roguish eye,
 And gave a well-timed wink,
 And they could not stand the sound in his hand,
 For he made the guineas chink.

And conscience late, that had such weight,
 All in a moment fails,
 For well they knew, that it was true:
 A dead man told no tales.

* * * * *

Then, though the key of the church door
Was left with the parson, his brother,
It opened at the sexton's touch,—
Because he had another.

* * * * *

They laid the pick-axe to the stones,
And they moved them soon asunder,
They shovell'd away the hard-prest clay,
And came to the coffin under.

They burst the patent coffin first,
And they cut through the lead,
And they laughed aloud when they saw the shroud
Because they had got at the dead.

And they allow'd the sexton the shroud,
And they put the coffin back,
And nose and knees they then did squeeze
The surgeon in a sack.

The watchmen as they passed along
Full four yards off could smell,
And a curse bestow'd upon the load
So disagreeable.

So they carried the sack a-pick-a-back,
And they carved him bone from bone,
But what became of the surgeon's soul
Was never to mortal known.

Private watchers, affectionate relations, suspicious of the watchers, would often mount guard in relays, but if asleep for half an hour the resurrectionist had his work done. This state of things led some to employ the “resurrection-man” himself as a watcher, with a large bribe, but he in turn was outwitted by a cleverer one of his own class, who succeeded many times in making him incapable with drink.

At Crail, a house was erected for keeping the bodies until decomposition set in rendering them useless for anatomical purposes, and then buried. The graveyard walls were sometimes built of loose stones so as to make scaling almost an impossibility, and many a lodge was erected at a churchyard gate as a watch-tower, which would never have been placed there as an ornament.

The manner in which a body was “lifted” was to clear away the earth from the head of the coffin, and by means of a strong crowbar, made for the purpose, force it between the body in the coffin and the lid, which

was pressed up by lever power. The weight of the earth generally caused the lid to snap at about one-third its length. Whenever this happened, the body was drawn out. The nature of the narrow bed was evaded by rounding the shoulders well over the chest, and in drawing out the body gave it a turn so as to extract it by the diagonal opening already made. The greatest care was exercised to rearrange everything above the grave, and every detail was carefully noted by the

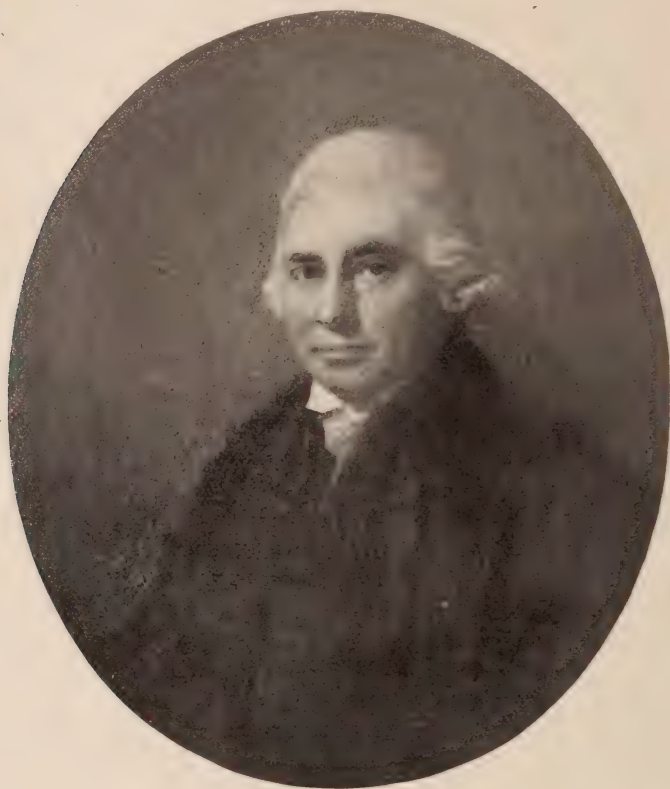


FIG. 5.—Alexander Monro to whom the body of William Burke was delivered by the court of high justiciary and by him publicly dissected and anatomized.

“resurrection-man,” the slightest alteration in a plant or an oyster-shell being enough to tell the practiced eye of desecration.

An idea of the amount of money that could be made in body-trafficking can be judged from the testimony given by a body-snatcher before the Anatomy Committee of the House of Parliament. A gang of six or seven disposed of 312 bodies during the regular dissecting session. The average price of an adult body was £4, 4s., thus reaping an income of 1,328 guineas, or about \$6,000.00, nearly a thousand dollars apiece.

This was exclusive of the teeth, which were generally sold to dentists, and in which these men did a large trade, and when not working bodies, the "resurrection-men" were engaged in stealing teeth from wounded men on stricken fields, and haunted the battlefields of the Peninsula, adding still further to the horrors of war. Teeth were very valuable in those days, and in one instance a full set brought sixty pounds. Bodies were classified as "large," "small" and "foetus." A "small" was a body under three feet long and sold at so much per inch.

In a very interesting book, "The Diary of a Resurrectionist," the following laconic entries were made:

"Wednesday, Jan. 8, 1812. At 2 A. M. got up, the Party went to Harps, got 4 adults and 1 small, took 4 to St. Thomas'. Came home, went to Mr. Wilson & Brookes, Danl. got paid £8, 8, 0, from Mr. Wilson. I recd. £9, 9, 0 from Mr. Brookes. Came over to the borough, sold small for £1, 10, 0. Recd. £4, 4, 0 for adult. At home all night."

"Friday, Aug. 28, 1812. Separated to look out; brought the F. from Bartholm. to St. Thomas, having got settled took from Hollis £1, 0, 0, afterwards met at St. Thos. & went to St. Jns. Ben not with us work'd two holes one bad, drew the C.ns. (opened two graves; one body too decomposed to bring away, so they drew the canine teeth and sold them) & took the above to St. Thos."

The state of affairs in Edinburgh was identical with that of London, with the exception that criminals were fewer and anatomical students more numerous than in the southern capital. The great medical attraction in Edinburgh was the teaching of anatomy successively by the Monros, father, son and grandson, who as university professors of anatomy, from 1720 to 1846, made Edinburgh world-famous. Unfortunately, the progress of the teaching of anatomy was slow here as in London, being hampered by law and superstition, and body-snatching was engaged in, there being no other way of getting material. Extramural teaching in Edinburgh attained its perfection under Dr. Robert Knox, who had a class of 505 students during 1828 and 1829. The demand for material was, of course, as great here as in London, and bodies brought from £10 to £20 each. Paris was the paradise of the anatomist on account of the great number of bodies to be easily obtained, and the absence of awkward inquiries about suspicious deaths. From France, as well as England, importations were made into Scotland.

The schemes and stratagems employed to ensure a safe deliverance of bodies procured at a distance from the centers of teaching were truly ingenious. The supply was sent in trunks and hampers, either anonymously, addressed or without any address. Previous to the trunk being sent to the depot or freight house, an invoice or a letter of advice was sent by mail, stating that on a certain train, and on a certain day,

a body packed in a particular box or trunk with a certain address, or marked perishable, glass, to be kept dry, will be forwarded accordingly. A person is in waiting at the office to claim such a package, pay the charges, and it is safely delivered at the proper destination. An amusing anecdote is told of how packages sometimes got mixed in delivery. A porter one day brought a box to a certain lecture room, and as this box was very similar to those in which bodies generally came, and without any address or mark, it was understood by the porter and by those to whom it was delivered, that it contained a body. Some little time after the porter was gone the box was opened, but to the utter astonishment of those present, instead of a dead body it contained a very fine ham, a large cheese, a basket of eggs and a huge ball of yarn. A present, no doubt, from a country cousin, and intended to have reached a different destination. A body in a box without address had come by the same conveyance, and had no doubt been changed by mistake, but what the feelings were of the party who received it can only be guessed at.

The wholesale way in which the "resurrection-men" worked is shown in the diary already referred to :

"Saturday, Dec. 28th, 1811 ; At 4 o'clock in the morning got up, with the whole party to Guy's and St. Thomas' Crib, got 6 took them to St. Thomas's. Came home and met at Thomas's again, packd. up 3 for Edinboro, took one over to Guys."

"Wednesday, Jan. 15th, 1812 ; Went to St. Thomas's. Came back, pack'd up 2 large & 1 small for Edinburgh. At home all night."

Such were the everyday occurrences in London and Edinburgh medical life. The realization of the extent to which traffic in human corpses had grown was brought about in 1828 when in Edinburgh occurred the horrible episode of Burke and Hare, who, in a low lodging house, smothered their victims and offered their bodies for sale.

On the morning of Friday, October 31, 1828, William Burke made the acquaintance of a poor beggar widow, whose maiden name had been Docherty. By a coincidence Burke's mother was a Docherty, so in the fullness of his heart he offered to give breakfast to the poor woman and during the day closely questioned his guest about the old home and family. He grew more and more friendly, until he finally offered her a lodging for the night. To accommodate her, Burke had to evict a married couple named Gray, but arranged for them to sleep at the house of his friend, Hare, close by. Burke was living with a woman, Helen McDougal, who passed as his wife. His neighbors were Irish of the poorest class, and on the evening in question, Hallowe'en, they came in and took their whiskey.

The next morning Burke sent for Gray and his wife to come and have breakfast, and they found on their arrival that Mrs. Campbell, or

Docherty, was no longer there. McDougal vouched and answered that she had been troublesome in the night, and that they had turned her out. After breakfast there was more whiskey and merriment, and Mrs. Gray's curiosity was aroused by Burke's anxiety lest anyone should go near a heap of straw and litter at the foot of the bed. Not until late in the afternoon, when left alone with her husband, did she have an opportunity to investigate. Then she went straight to the straw, and

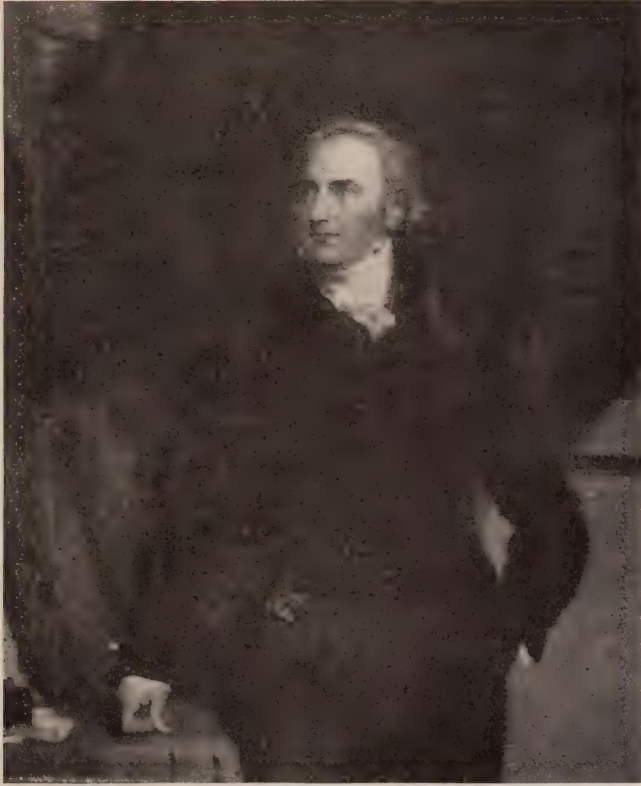


FIG. 6.—Sir Astley Cooper, who probably more than any man of his time knew thoroughly the secrets of the "resurrection-men."

groping in it, felt a human arm, and half under the bed lay the naked and lifeless body of the beggar woman. The Grays, horror-stricken, hastened from the room, spurning the entreaty of McDougal, who met them in the doorway, that they say nothing to the police. By eight o'clock Burke and McDougal were arrested by the police as they were coming out of the old tenement, sunk below the level of the street. The body was not to be found, but it was ascertained that shortly after six o'clock Burke, McDougal, Mr. and Mrs. Hare had all been seen coming

up from the sunken flat accompanied by a porter carrying a packing-case, stuffed on top with straw. The next morning a search was instituted, and the first place visited was the dissecting-room of Dr. Knox.

Burke after a long trial confessed and was executed January 28th.

TRIAL
OF
WILLIAM BURKE
AND
HELEN M'DOUGAL,
BEFORE THE
HIGH COURT OF JUSTICIARY,
AT EDINBURGH,
ON WEDNESDAY, DECEMBER 24. 1828,
FOR
THE MURDER OF
MARGERIE CAMPBELL, OR DOCHERTY

TAKEN IN SHORT HAND BY MR JOHN MACNEE, WRITER.

WITH AN ILLUSTRATIVE PREFACE. ALSO PORTRAITS OF BURKE,
M'DOUGAL, AND HARE,—VIEW OF THE INTERIOR OF
BURKE'S HOUSE, PLAN OF THE PREMISES, &c.

" — *Specus et Caci detecta apparuit ingens
Regia, et umbrosa penitus patuere caverna.* "
ÆNEID, LIB. VIII.

" The Court of Cacus stands reveal'd to sight;
The cavern glares with new admitted light."
DAYDEN'S VIRGIL, BOOK 8.

EDINBURGH

ROBERT BUCHANAN, 26, GEORGE STREET, WILLIAM HUNTER, 23,
HANOVER STREET; JOHN STEVENSON, 87, PRINCES' STREET.
AND BALDWIN & CRADOCK, LONDON.

MDCCCXXIX

FIG. 7.—Title-page of the trial of Burke and McDougal before the high court of justiciary at Edinburgh, December 24, 1828.

The lurid scene closed hideously with a rush of thousands of students into the Edinburgh anatomical theatre to dissect the body of Burke after execution. His skeleton is in the medical museum of the University of Edinburgh. Hare turned King's evidence and was released early in February. It is not known when he died, but he survived Burke for

over forty years. Vengeance followed him, and when his identity became known to some fellow-workmen, they threw him in quicklime and blinded him, and he spent his last days as a blind beggar on the streets of London.

Burke and Hare owned to sixteen murders in the course of a few months, and the number might have increased indefinitely but for the accidental discovery of Docherty's body. The victims were industriously plied with liquor till he or she became unconscious. Then the two partners in crime would fall upon them, and while Hare usually choked the poor wretch to death, Burke would throw himself upon the body and thus hasten the end. The two women were undoubtedly privy to the crimes, but they invariably left the rooms while the murder was being perpetrated. It was told that Burke and Hare had been overheard by their wives to say, that if bodies failed them they would not starve so long as they had them to fall back on.

The crimes had been suggested to them by the liberal price given by Dr. Knox for the body of an old pensioner who died a natural death in Hare's house. The bodies were all taken to Knox's dissecting-room. No questions were asked, and one of his assistants told them on the first visit that he would be glad to see them when they had any other body to dispose of. Burke has enriched the English language with a new synonym, "burking," which does not always mean killing a person for the purpose of selling the body, but refers to the method adopted, viz: suffocation.

Horrible as this crime was, another occurred in London three years later which stirred the English public against the "resurrection-men" and the anatomists and aroused Parliament to the realization that some determined steps must be taken to prevent the wholesale spoilation of graves. On November 5, 1831, three men, Bishop, May and Williams, tried to dispose of a body at the dissecting-room of King's College, but the appearance of the subject excited the porter's suspicion of foul play, so that he communicated with the demonstrator of anatomy, who further confirmed the porter's suspicions. To delay the men until the police could be notified, a fifty-pound note was produced, and as no change could be made the men waited. Soon after, the police arrived and the men taken into custody. A jury found all three men guilty, and sentenced them to death. Bishop and Williams were executed, but May was reprieved and sentenced to transportation for life. The bodies of Bishop and Williams were removed from Newgate to Surgeon's Hall on the evening of the execution, the Royal College being by charter, as mentioned before, entitled to the bodies of all convicts found guilty of murder and sentenced "to be dissected and anatomised." The bodies were immediately afterwards given up, the body of Bishop to King's College and that of Williams to Dr. Tuson's Theatre of Anatomy.

From the confessions of Bishop and Williams it was shown that they had tried to sell the body at Guy's Hospital, but being refused there made two other unsuccessful sales until they tried King's, where the crime was detected. The body was that of an Italian lad, 14 years old, who made his living by showing white mice. They had enticed the boy to their rooms, drugged him with opium and then lowered his body into a well until he was suffocated. His teeth were extracted and sold for twelve shillings to a dentist.

Public feeling was now very strong in favor of some law, and after various measures were introduced into Parliament from March, 1829, to December, 1831, it was not until August, 1832, that the famous Warburton's Anatomy Act finally passed safely through both Houses of Parliament and became a law. This act provided that the Secretary of State for the Home Department in Great Britain and the Chief Secretary in Ireland were empowered to grant licenses for anatomical purposes to any person lawfully qualified to practice medicine, to any professor or teacher of anatomy, and to students attending any medical school on an application signed by two justices of the peace, who would certify that the applicant intended to carry on the practice of anatomy.

It provided, further, that the executors or other persons having lawful possession of a body, excepting undertakers, might give it up for dissection unless the deceased had otherwise expressed a wish during life or unless a relative objected to the body being given up.

If a person had expressed a wish to be dissected, this was to be carried out unless the relatives raised an objection. No body was to be moved for anatomical purposes until forty-eight hours after death, nor until the expiration of twenty-four hours' notice to the Inspector of Anatomy. A properly filled death certificate had also to be signed by the medical attendant before the body could be moved. Dissection of the body of murderers was done away with. Three inspectors were appointed to carry out the law, one for England, one for Scotland, and one for Ireland. There was no provision for punishing persons found violating graves, as this had been decided was an offense at common law. The success of the Act was almost immediate, and very few alterations have been made in it up to the present day. After its passage the "resurrection-men" pass out of history, but public feeling ran high against them for a long time. Many sought employment under assumed names, but when found out had to move to other quarters.

Amusing anecdotes are told of hired resurrectionists and their conspiracies with grave diggers and night watchmen. A hospital demonstrator was taken by one of these professionals to interview a grave digger as to the "working" of a body. The grave digger represented himself as so indignant at being asked to betray his trust, that he drew a huge horse pistol and pointed it at the demonstrator, adding a volley

of oaths. Escaping from the house at the peril of his life, so he thought, he encountered the waiting “resurrection-man.” “Now you see, sir, what desperate ruffians I have to deal with; you’ll need to give me something handsome to buy that man over.”

Writers of fiction, Dickens in the “Tale of Two Cities,” Warren in the “Diary of a Late Physician,” under the title of “Grave Doings,” Lytton in “Lucretia,” and Stevenson in the “Body Snatcher,” have taken advantage of these stirring times to draw characters and descriptions from. And finally, we have Thomas Hood’s humorous poem, or as he calls it, a pathetic ballad, on “Mary’s Ghost.”

’Twas in the middle of the night,
To sleep young William tried,
When Mary’s Ghost came stealing in,
And stood at his bedside.

O William, dear! O William dear!
My rest eternal ceases;
Alas! my everlasting peace
Is broken into pieces.

I thought the last of all my cares
Would end with my last minute;
But tho’ I went to my long home,
I didn’t stay long in it.

The body-snatchers they have come,
And made a snatch at me;
It’s very hard them kind of men
Won’t let a body be!

You thought that I was buried deep,
Quite decent-like and chary,
But from her grave in Mary-bone
They’ve come and bon’d your Mary.

The arm that us’d to take your arm
Is took to Dr. Vyse;
And both my legs are gone to walk
The hospital at Guy’s.

I vow’d that you should have my hand,
But fate gives us denial;
You’ll find it there, at Doctor Bell’s,
In spirits and a phial.

As for my feet, the little feet
You used to call so pretty,
There's one, I know, in Bedford Row,
The t'other's in the city.

I can't tell where my head is gone,
But Doctor Carpue can;
As for my trunk, it's all pack'd up
To go by Pickford's van.

I wish you'd go to Mr. P.
And save me such a ride;
I don't half like the outside place,
They've took for my inside.

The cock it crows—I must be gone!
My William, we must part!
But I'll be your's in death, altho'
Sir Astley has my heart.

Don't go to weep upon my grave,
And think that there I be;
They haven't left an atom there
Of my anatomie.

THE X-RAY AS A DIAGNOSTIC AID.

BY EDWARD HOLMAN SKINNER, M. D., Kansas City, Mo.

The diagnostic field of the x-ray is constantly widening. Each month brings forth some new means of application or some valuable advance in technique. The increased competition among the manufacturers of tubes and apparatus works to our advantage for as we increase the efficiency of our tubes to the minimum exposure we are approaching that mirage of the x-ray enthusiast—the split second exposure with a maximum detail.

The diagnostic field of the ray in traumatic surgery is, at the present time, thoroughly established. In diseases of bone tissue it is constantly employed in differential diagnosis. The ray in medical diagnosis is a more or less undeveloped field. The increased efficiency of tubes and interrupters, together with the introduction of shadow-producing substances into visceral cavities, has opened up this field of diagnosis in the tissues of low density. In fact, the ray has become a necessity in modern diagnosis and cannot be neglected any more than the microscope. Where formerly the courts questioned the introduction of skiagraphs as evi-

dence, they now hold him negligent who fails to use this aid to accuracy in diagnosis.

The use of the ray in renal, ureteral, vesical and gall stone cases, on account of the many failures in the early days of the ray, has been neglected more than it should be. The interpretation of the negative in the hands of one familiar with the value of shadows is of the utmost importance. Radiographic shadows remind me of the attempts of some to figure artistic shapes on the moon. One is only able to decipher them by perseverance in observation. The proper reading of a negative is truly an art. So much also depends upon the development of the negative by the one who made the exposure and especially is this true in stone work. I have always favored a lengthy development of the negative and this becomes of the utmost importance in searching for detail in other than bone tissue. It becomes the x-ray operator to familiarize himself with the principles and practice of photographic chemistry in order to get the most out of his work. It is absolutely impossible for the commercial photographer to give the time necessary to the development of x-ray negatives and further he is unfamiliar with the exposure and other details which go to bring forth the good negative.

The advanced work in the use of the bismuth emulsion is of peculiar interest to the internist. Hulst, of Grand Rapids, has been doing the best work along these lines in America. On account of the similarity in density of the abdominal organs it becomes necessary to introduce a non-irritating, opaque substance in sufficient quantity to give us the outlines of the hollow viscera. As much as one ounce of bismuth emulsified with milk may be given without untoward results. For stomach work the radiograph is taken immediately, also in diverticula of the cesophagus. It is advisable to quiet the peristaltic action of the bowels in stomach and intestinal work. In as much as we are not attempting to get the greatest detail in our plates of this character it is possible to take a short exposure and then make a lengthy development to bring out the outlines of the viscera as marked by the bismuth emulsion. The patient must be subjected to two exposures in splanchnoptotic conditions on account of the change of positions in the organs in horizontal and vertical postures. By this means we may determine not only the position of organs in Glenard's disease, but we may also test the motor efficiency of the stomach, diagnose a dilated stomach or hour-glass stomach.

Radiographic work of the thorax has a large field. The diagnosis of the thoracic tumors and aneurysms has long held our attention. The varying density in normal and pathological conditions of the chest viscera makes the work easier than abdominal radiography. The one great difficulty is in making a short enough exposure to obviate the blurring of the negative by the respiratory movements. Fluoroscopic findings are very

satisfactory in chest diagnosis to note the excursion of the diaphragm, the position of the heart and, in an incipient tuberculosis, we may be able to determine the arhythmic excursion of the diaphragm, high scapula, small left and large right heart that materially aid in an early diagnosis of this condition. The radiograph can show the congested pneumonic areas, cavities, displacement of organs and presence of tumors.

On account of the greater ease with which bone detail is obtained on the radiographic plates we have had more reports to familiarize ourselves with this field of the ray. The correct diagnosis and reduction of recent fractures under the ray has without a doubt given the surgeon and the patient more satisfaction than any one other recent feature of surgical progress. We avoid the discomfort and pain occasioned by the manipulation of the tender parts and the uncertainty of a correct diagnosis of the lesion when the tissues are swollen. In cases of so-called sprains where the case has run along without improvement for a week or ten days we frequently find that there is really a splintering of the bone at the sprained joint which readily accounts for the delayed recovery. This is especially liable to happen in injuries of the wrist and hand or ankle and foot.

We are frequently called upon to determine the location and extent of an osteomyelitic lesion. The areas readily show up on account of the decreased resistance of the diseased bone to the penetration of the x-rays. In arthritis deformans the ray quickly determines the extent of the ositic proliferations or of the disintegration of the articular extremities. In the diagnosis of osteosarcoma we are aided by the ray as we are able to show the distorted outlines and the absorption of bone tissue in the vicinity of the lesion. In fact in all neoplastic growths of bone tissue we are able to reach an earlier and more comprehensive diagnosis with the aid of the ray than by simply depending on our clinical findings.

It is hardly necessary for me to call your attention to the use of the ray in diagnosis of tubercular lesions in bone tissue. We are able to show the focus of infection by the absorption area of involvement that is impressed upon the x-ray negative. In psoas and iliac abscess we may be able to determine the outlines of the abscess cavity and the areas of bone involvement.

There is a painful affection of the heel that the ray very frequently helps to diagnose. The patient will complain of rheumatism that bothers him in the morning on arising, but does not necessarily increase in painfulness during the day. There are no signs of inflammation and anti-rheumatic treatment fails to clear up the case. We have found in two such cases that there was a small spur on the plantar surface of the calcaneum that when removed completely relieved the case. These spurs may be determined by the ray.

Not only as a diagnostic aid but as a therapeutic measure there is a wonderful field for the ray. The future holds so much in store for this marvelous, unknown light that we may look for great advances as time brings more minds into this department of medicine and surgery.

211-212 Rialto Building.

.SURGERY AMONG THE CHINESE.

BY DR. TEE HAN KEE, Municipal Physician Bureau of Health, Manila,
P. I.

It will not fail to interest medical men who are concerned in the progress of our profession and the welfare of humanity the world over when we come to a discussion of surgery among the Chinese—the methods employed by them in combating diseases and the resources at their command in the treatment of accident and other surgical diseases in general.

Since the earliest days of China (3000 years B. C.) up to the present time the Chinese have had a system of the art of healing—surgical and medical—strictly and purely of their own, and it is not until very recently that the Chinese have adopted partially, modern medicine and surgery, or, as they term, “Western Medicine,” since it came from the West—Europe and America. Since the opening of the first five China ports to foreign trade, Western medicine has slowly but surely gained its foothold in China, until now there is scarcely a port where there is no modern hospital, or a town where there are no Chinese doctors practicing modern medicine and surgery. Moreover, the Chinese Government officials have opened their eyes by establishing modern medical colleges at Tientsin and Peking and it has been decided that more are to be established in the principal cities and towns of every province. It will not be long before we will be able to find modern medicine and surgery taking the place of the old throughout China.

Now it is this strictly pure Chinese art of healing that I am going to discuss. I will not attempt to touch on modern medicine or surgery, as we all know very well what modern surgery is and how it is practiced.

Since surgery is based on anatomy and physiology, and as dissections on human bodies are not practiced in China—in fact they are not allowed as it is considered inhuman to open a dead body—therefore their notions on anatomy and physiology are absurd. Their descriptions of the structure and functions of the different internal organs are all from pure guesswork. The heart is supposed to be attached to the trachea and contains more air than blood. The lungs are believed to control the sense of smelling and to be the centre for the production of air. To the liver is assigned the office of controlling the sense of seeing, and the gall bladder controls the will power.

Nothing has been written by them about surgical pathology and bacteriology, though from empirical experiences they know something about aseptics and antiseptics. They always boil their instruments before using and never wash any wound with unboiled water for fear, as they say, of suppuration. They have quite a number of substances used as antiseptics, their greatest favorites being preparations of mercury, borax and common salt.

Anæsthesia has been known since five thousand years ago. They could produce general anæsthesia as well as local. For producing local anæsthesia they use eight different substances mixed with alcohol and applied locally. One of the substances is a Chinese plant which has the taste of

圖法用執醫索振

Fig 1



Apparatus for treating fracture of the ribs

cocaine and another is pepper; the rest of them are all leaves of certain plants which produce more or less numbness when tasted. They have six substances for producing general anæsthesia. They are administered by mouth and are used chiefly by the Chinese for extracting arrow heads, setting fractures, reducing dislocations, etc. The ingredients contained in them are partly the same as those for the local anæsthesia. These anæsthetic substances, both local and general, seem to be rather safe, as no bad effects or deaths have been recorded.

Surgical Dressings and Appliances.—Operations are very seldom performed, except the extraction of foreign substances from the body. scraping of necrotic bones and puncturing of abscesses. Abdominal opera-

tion so far has not been recorded as having been performed by Chinese methods, though trephining of the skull has been done several times.

As in medicine, they have the same curious non-scientific classification of surgical diseases—the “Hot” and “Cold” system. For example, an abscess, when rapidly formed and at the stage toward suppuration, with all the signs of inflammation—as redness, swelling, heat and pain—is called the “Hot Abscess.” In such a case cold lotions and soothing ointment have to be applied. Cooling drugs, such as diuretics, also are to be administered internally. When an abscess is slowly formed with no tendency towards suppuration and is suffered by a weak person, and shows only moderate signs of inflammation, it is called the “Cold Abscess.” For such cases, hot poultices, or other warm applications are generally applied, or cauterization, or cupping, is used. Bread, rice and linseed are generally used as poultices. Preparations of mercury and borax are often used as ointments and lotions.

Alcohol, menthol, and lead are employed as evaporating lotions and often applied for pains and swelling due to inflammation.

Drainage tubes in the form of feather quills, decalcified bones, or bamboo sticks are sometimes used. They are employed for deep-seated abscesses or wounds. Bandages and splints are often applied especially in cases of fracture and dislocations of bones. There are no such instruments as catheters used for retention of urine. In such cases, they always depend on warm sitz baths and internal remedies.

Cauterization is by far the most frequently employed. It is not only used for arresting hæmorrhage, destroying growths and cutting tissues, but it is supposed to cure innumerable kinds of diseases by being applied to certain points of the body which will be described later on.

Venesection has sometimes been performed for cases of extremely plethoric subjects. It is done by cutting any vein of the body with a small pointed scalpel. The veins most frequently chosen are those of the fingers as this region is considered to be the least dangerous.

Torniquets for arresting hæmorrhage have at times been used, but bleeding is almost always stopped by tamponing the wound, by direct digital pressure, or in severe cases, by cautery. Ligatures have been used for dividing minor growths, such as warts, pile, etc., but never used for tying bleeding vessels.

Amputations are sometimes performed. These are usually employed for gangrene or necrosis of bones of the extremities. The operation is performed with a big knife and the part is chopped through with much force. Cauterization is the method used for arresting the hæmorrhage, therefore, the stump generally presents a very ugly appearance and often the wound is never healed up.

Thus far, I have given you a general idea about Chinese surgery; it

圖法用膝抱

圖 膝 抱

圖法用籬竹簍竹

圖 籬 竹

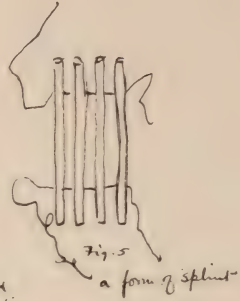


圖 簍 竹

圖法用柱腰

圖法用面正木通

圖法用面背木通

圖 木 通



will now be interesting to know how a surgical disease is diagnosed and how each particular case is treated.

How a Surgical Case is Diagnosed.—The following rules were laid down by an eminent surgeon to the Chinese Emperor about 250 years ago:

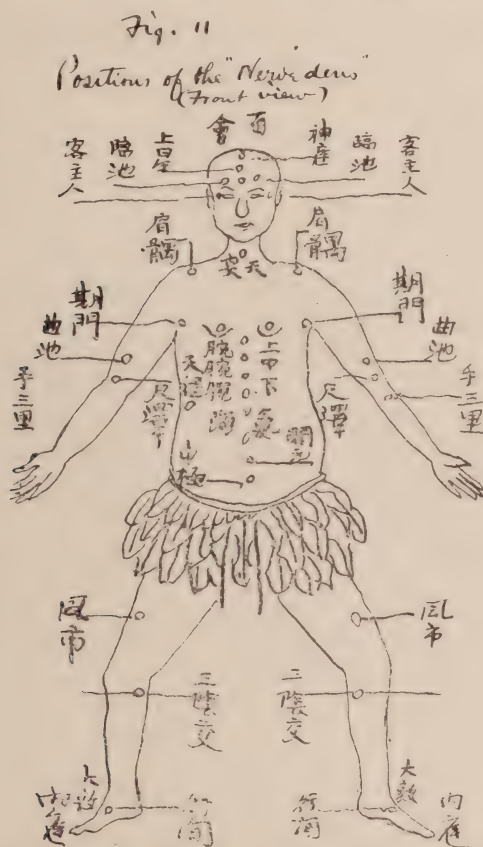
1. Inspection. 2. The voice. 3. Questions on patient's condition and previous history. 4. The pulse.

1. Inspections are made as follows:

(A.) Appearance of the face: 1. The forehead represents the heart and when the heart is diseased the face presents a reddish or flushing color, e. g., acute endocarditis. 2. The nose represents the spleen and when the spleen is diseased the face presents a yellowish color, e. g., malarial cachexia. 3. The left cheek represents the liver and presents,

when the liver is diseased, a greenish color, e. g., jaundice. 4. The right cheek represents the lungs, and the face is colorless or very pale when the lungs are diseased, e. g., tuberculosis of the lungs.

(B.) Appearance of the tongue: 1. When the disease is "Cold" the tongue is pale, moist and thinly furred. 2. When the disease is "Hot" the tongue is red, dry and thickly furred. 3. When the patient is dying, the tongue is dry and covered with a thick darkish yellow fur. 4. Appearance of diseased part, for example, abscess on the back. The



穴道圖
仰位

abscess is said to be "Hot" when the cardinal signs of inflammation are present and "Cold" when not.

2. The Voice. Find out if the voice is abnormal, e. g., phthisis produces a weak voice, sore throat a harsh voice, and insanity an incoherent speech.

3. Questions on patient's condition and previous history:

A. Ask if the patient has any fever or shivering; if he has any excessive perspiration; any headache; any appetite; movement of bowels,

pain in chest or abdomen; defect of hearing; sore throat, etc. B. Inquire of the patient about his previous illness, about the cause and symptoms. C. In women, find out if the menstruation is regular. D. In children, ask if the child has or has not previously suffered from smallpox, chickenpox or measles. The Chinese doctors believe that every person is sure to suffer every one of these three diseases during the life time. This explains the reason why children are often intentionally exposed to persons suffering from these diseases. They believe that children bear these diseases better and with less danger.

4. The Pulse.—The pulse is always felt in both medical and surgical diseases, as they say, to ascertain whether the disease is "Hot" or "Cold." The wrist is always the part chosen for the purpose. They claim that the rate and volume is different in healthy persons during the different seasons. In spring the pulse should be full, in summer large, in autumn thready and in winter hard.

I will now mention some special diseases and describe how these different diseases are treated according to the Chinese method.

1. Bites of rabid dogs—Hydrophobia. The patient should at once be brought to a quiet place, where the wound is to be washed at once with cold tea or any other lotion, and then cauterized with hot iron. Then search the head immediately for two or three red hairs which are to be pulled out. The juice of "Ki Choy" (a kind of plant) is to be given internally per mouth; this juice is to be repeated every seven days for seven times. Patient should for one year avoid eating pork and fish, alcohol drinking and sexual intercourse, and not to take dog meat during the life time. Application of the juice of the leaves of evergreen is also advised.

2. Bites by horse are treated by asking the patient to chew a piece of pork with rice and then apply it to the wound. It stops the pain at once and healing takes place quickly.

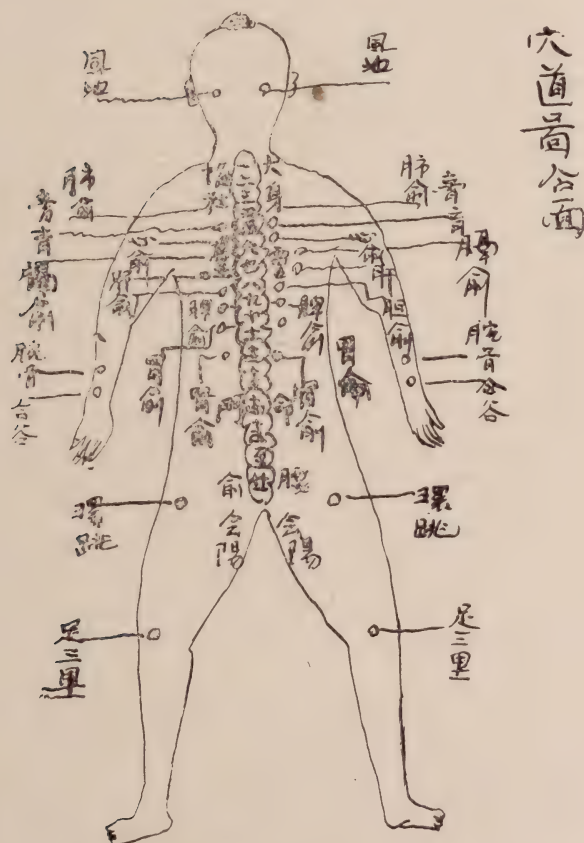
3. Bites by poisonous snakes. Cut open an old smoking bamboo pipe; wash out the inner surface of the pipe with cold water, and allow the patient to drink it. If the snake is poisonous, the patient will not feel the pungent taste of the nicotin. The same stuff is to be applied locally. This treatment is recorded to have been tried with success many times. Another method is to rub two knives together in water and drink it. Applying to the wound the juice of a plant called "Lun Wong Kek" is said to be very effective. When the snake is coiled round the body of a person, with no tendency to loosen, the patient is advised to roll round on the ground when the snake will feel tired and loosen itself.

4. Burns and scalds. Honey with boiled water, or warm sugar water, or child's urine is to be given per mouth immediately. Peanut oil shaken with lime water applied to burned surface. The burned surface should

never be washed or soaked in cold water, as is often done. Human milk with salt has also been used.

5. Hæmorrhage from cut wounds. Slice a piece of lean meat and apply to the cut surface; hæmorrhage is at once stopped. Apply to the wound burned paper. Tampon the wound with tobacco, or cauterize with hot iron.

Fig. 12.
Positions of the "nerve dew"
(Back view)



6. Concussion and compression of brain with hæmorrhage from mouth and ears, and patient in an insensible state resulting from blows or falls. Keep the patient perfectly quiet in a dark room and avoid all visitors. Allow the patient to sit down with arms and legs folded. Give at once per mouth boy's urine, or warm water with sugar and alcohol.

Apply to the head or wounded surface warm soil dug up three feet below the surface of the earth.

7. Prolapse of intestine from stab wound. Wash the wound and prolapsed part with boiled vinegar; the intestine will spontaneously slip back. Apply to the wound skin of newly killed chicken.

8. Foreign bodies.—A. Needle in palm. If it is impossible to extract it, give the patient internally ash of burned feather of hawk mixed with alcohol. Apply to the wound a mixture of finely ground porcelain powder and olive oil, or ham skin; the needle will slip out gradually like magic. B. Shots or shells in flesh. Apply to the wound fish stomach ground together with starch; the shell will find its way out. C. Fish bones in throat. Give the patient saliva of dog obtained by hanging the dog up-side down (dog's saliva is used because dogs are skillful in digesting bones); or give the patient powdered bone of tiger. Powdered liver of fish when used will melt the bone.

We now come to fractures and dislocations of which the Chinese from experience know something.

Fracture. The following symptoms are described in a Chinese book on surgery:

1. Abnormal mobility. 2. Deformity. 3. Crepitus felt on manipulation. 4. Swelling and ecchymosis, pain and tenderness.

The following methods are advised to reduce a fracture:

1. Manipulation and traction. 2. Extension by pulleys in difficult cases.

To diagnose a case of fracture from dislocation:

1. Dislocation has no crepitus. 2. Dislocation has rigidity while fracture has abnormal mobility. 3. The deformity in dislocation when reduced has no tendency to recur.

Treatment.—Treat the swelling and bruise with evaporating lotions. Reduce the fracture by manipulation, traction, or counter extension. Give local anæsthetic to stop the pain, and general anæsthetic in case the fracture is difficult to reduce. Apply splint to the fractured part. (See figures 1 to 10.)

Now, there is another method of treatment termed by the Chinese "the spiritual medicinal cauterization treatment." This treatment is believed to be omnipotent. It cures as if by magic nearly all the surgical and medical cases, especially neuralgic diseases. The whole body, head, neck, trunk and extremities are believed to be represented by many points, or as they are called "nerve dens" (see fig. 11). Each "nerve den" represents the cause of certain diseases. For example, the center of the forehead is supposed to be responsible for such troubles as coryza or influenza, therefore the person suffering from these diseases will recover at once by cauterizing that particular spot, or "nerve den." Or again, when a

person suffers from pains in the stomach or heart, these troubles will therefore be cured by cauterizing the "nerve den" in the center of the epigastrium, which spot is believed to be responsible for such pains (see fig. 11).

This "medicinal cauterizer" is prepared by rolling in a paper 17 different kinds of Chinese medicines into a stick (some of these medicines are sulphur, cinammon, spice, deer's horn and cardamon). This stick is then burned and applied to the "nerve den."

The cauterizing of the "nerve den" may be applied either *Directly* or *Intermediately*. It is termed *Direct* when the "medicinal cauterizer" actually burns the part, and *Intermediate* when there is something interposing between the skin and the cauterizer. The material used for the interposition is either a bandage, a slice of ginger, or a piece of bread.

There are three kinds of the "spiritual medicinal cauterizer," viz: 1. The "medicinal cauterizer." To be applied *Directly* or *Intermediately* to the skin. 2. The "spice stick," To be applied directly to the skin. 3. The "medicinal needle." Used by puncturing the "nerve den" directly.

I have seen this treatment performed among the Chinese, Japanese, Koreans, Anamites, Filipinos and East Indians.

How to use the "medicinal cauterizer:" 1. Make the diagnosis: Find out which "nerve den" is responsible for the trouble. Mark the spot with ink, and bandage that part with seven layers of red calico. 2. Light the "medicinal cauterizer" and apply it to the bandaged part until the patient feels hot on that part, then stop the treatment for a while, and apply again for at least seven times, or no more than 49 times. 3. The day must be fine and the room airy when the treatment is to be employed. 4. After the treatment, the patient must keep in bed for a while, and good wine must be given for helping the action of the medicine.

Surgery among the Chinese is after all empirical, superstitious, and not at all scientific, but, as I said before, the waves are turning, and old rags are being gradually replaced by new clothes. It will not be long before you will find China one of the centers for scientific research.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

ROENTGEN DIAGNOSIS IN TUBERCULOSIS OF THE LUNGS.—PFOERRINGER AND BUNZ (*Muench. Med. Wochen.*, No. 2, 1907).—Lay great stress upon the examination of suspected tubercular cases with the x-ray. The diagnosis can often be made in this manner when other methods leave us in doubt. In order to obtain the best results in treatment, the diagnosis must be made as early as possible. The physical examination is often doubtful; the finding of tubercule bacilli usually occurs too late; the tuberculin test cannot be applied by everyone. The authors report their findings with the x-ray in 136 cases. In 82 of these cases advanced changes were found. Chronic advanced tuberculosis shows itself as a large diffuse shadow and is easily recognized. In 42 cases the Roentgen findings corresponded with the results of the physical examinations; in 30 cases the Roentgen rays revealed more than the physical examination and in 10 cases, less. Cavities, in order to be seen, must occur in infiltrated areas and be empty. Latent central affections, glands, and peribronchitic affections are brought out by the x-ray when physical examination fails entirely to reveal them. Pleuritis sicca is not visible; exudative pleuritis is. Incipient apical catarrh demands most careful interpretation. In 54 cases showing apex involvement of some sort, 25 of them were shown by the x-ray to be tubercular in character.

The movements of the diaphragm may be seen with precision and any variation in them, and their relations to tubercular involvement, considered. Williams's sign, the unilateral diminution of the diaphragmatic excursion on the affected side, is a valuable one as studied with the x-ray.

ORTHOTIC ALBUMINURIA.—HEUBNER (*Berl. klin. Wochen.*, No. 1, 1907).—Various theories have been promulgated in explanation of orthotic albuminuria. As yet, however, no satisfactory explanation has been offered. In children it occurs not infrequently. Edel has attributed it to cardio-vascular changes which he found in a number of cases. Erlanger, Hooker, and others, have made a careful study of the blood pressure in this connection. It was found diminished in those with orthotic albuminuria. Loeb found the Koranyi quotient increased; a decrease of the sodium chloride excretion with simultaneous diminution of the quantity of urine. Inasmuch as this does not occur in nephritics he believes that most of the cases are of cardio-vascular origin. The author cites the case of a child ten years of age, who had 4 pro mille of albumin in the urine when up and about, and which promptly disappeared with bed rest. The child died ultimately of cerebral abscess

which offered the first opportunity to examine the kidneys in a case of this sort. Aside from a slight hyperemia and a few foci showing slight fatty metamorphosis of isolated cells, the kidneys were found practically normal. There were, however, evidences in the lungs and lymph nodes of a tubercular process, which tends to corroborate the statement of Mery that these cases are not infrequently a "pretubercular" manifestation.

INFLUENCES WHICH INTERFERE WITH THE HEALING OF GASTRIC ULCER.—TECKLENBERG (*Arch. fur. Verdaungskrankheiten*, Vol. xii, Pt. 6).—Believes that the chief obstacle in the way of complete and permanent cures of ulcer of the stomach is the stretching of the stomach. This "over-stretching" may be due to food and drink, to muscular atony, and to nervous causes, such as aerophagia and continued hypersecretion. The most important of these are muscular atrophy and the swallowing of air. When these influences are to be overcome in no other way, a gastroenterostomy is indicated. Ulcers which persist on account of these causes recover after gastroenterostomy.

DIAGNOSIS OF CARCINOMA OF THE STOMACH.—ZIRKELBACH (*Arch. fur. Verdaungskrankheiten*, Vol. xii, Pt. 6).—Conducted a series of observations in order to confirm the findings of Salomon with reference to the diagnosis of carcinoma of the stomach. Salomon found that in carcinoma of the stomach the washings contain more albumin and nitrogen than is found in the normal stomach, or in other pathological conditions. The stomach is thoroughly washed late in the evening and the patient is permitted to take no nourishment after the lavage. On the following morning the stomach is again washed out with 400cc. of physiologic salt solution and the quantitative determination in this is made for albumin and nitrogen. The author agrees with Salomon in every detail. He found in the examination of a large series of cases of all kinds that these substances were markedly increased in carcinoma.

UNUSUAL COMPLICATIONS OF BASEDOW'S DISEASE.—MOSSE (*Berl. klin. Wochen.*, No. 1, 1907).—Recites some interesting observations in cases of Basedow's disease. In one case in which there was marked improvement of the chief symptoms, there occurred a right-sided Graefe symptom with left-sided ptosis. These observations bear out the beliefs of Uthoff that in Basedow's disease there is an involvement of the bulbar nerves, especially the motor nerves of the eye. Whether the medulla oblongata is the seat of the primary lesion, or simply the locus minoris resistentiæ for the products of the thyriod gland, has not been determined. In another case with very pronounced symptoms there was total absence of a visible or palpable goitre. There was, in addition to the tachycardia, a marked irregularity of the heart's action not traceable to arterio-sclerosis. It was most probably due to the direct action of the poisons on the cardiac ganglia, or the myocardium. In 128 cases this was the first of the kind that he had observed.

A third case presented glycosuria. Naunyn, though he himself had never observed a case of Basedow's disease with spontaneous glycosuria, states that a number had been reported in the literature.

CONTUSIONS OF THE ABDOMINAL ORGANS.—HILDEBRANDT (*Berl. klin. Wochen.*, Jan. 7, 1907).—Calls attention to the frequency with which contusions of the abdomen occur as a result of increased industrial activity. He states, too, that a large majority of these cases may be saved if temporizing is not indulged in. He reports in his own experience 48 serious abdominal injuries with 39 recoveries and 9 deaths. The series included injuries to the stomach, intestines, spleen, liver, pancreas, kidneys, etc.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

A CONTRIBUTION TO THE STUDY OF OPSONINS.—Simon, Laner and Bispham. (*Jl. of Experim. Med.*, Vol. 8, No. 6)—While there is no doubt that Wright, by his work on opsonins, has opened up a new field of research, which may, theoretically and practically, result in a very important increase in our knowledge of dealing with infectious diseases, it has been the opinion of critical and careful observers that only the existence of certain substances in blood, influencing bacteria to be taken up by leucocytes, had been established, substances which the Germans called "bacteriotropic bodies," Wright opsonins. Wright was led to conclusions so far-reaching, and at the same time seemingly so convincing, that opsonin-enthusiasm is now reigning everywhere, and is liable to influence therapy in a profound way. It may be that this enthusiasm will prove justified by future work. For the present, it must be considered too early to draw any conclusions, much less to make a reaction not fully understood the basis of incisive procedures in the treatment of disease, and divert attention from those data that have enabled us to deal practically and theoretically with the phenomena of infection and immunity. For this the methods are not, as yet, exact enough. Especially the method of Wright, followed by almost any worker in this line, is influenced by so many subjective factors that exact comparisons are not possible. Simon and his co-workers have evolved a method that does away with the majority of these dangers and allows, at the same time, quantitatively, to determine the opsonin content of a serum. It allows, on the other hand, of subjecting the substances to investigations in all directions, and the results obtained are very remarkable and important. The opsonic index, established by Wright and based on an almost uniform quantity of opsonin in healthy individuals, must be taken *cum grano salis*. Simon has shown that in normal persons this quantity can and does vary greatly; in his way of measuring and at a dilution of 1:20, the value varies from 12 to 72 per cent. The authors have shown the influences that act on the variations in the same person, especially the process of digestion, etc. A uniform index, therefore, does not exist, and each individual has his own law. That digestion is a great factor in raising the opsonic content has been shown by Amberg,

who, in breast-fed babies always found a percentage higher than in adults, due to the fact that these babies almost constantly are in a condition of digestion. Investigations about the relation of opsonins to certain parts of the organism resulted negatively; nowhere did the extracts of exsanguinated tissues show the presence of these substances. The latter, therefore are peculiar for the blood alone. That the polynuclear leucocytes and lymphocytes have no relation to them, was demonstrated by special experiments.

The question of thermo-stability of opsonins is not solved yet; it appears, however, that the solution will lie in the direction of such a thermo-stability, if Dean's observations can be confirmed. The explanation given by Wright for Dean's findings cannot be accepted. A great problem is whether opsonins are specific or not. The whole vaccine theory of Wright is more or less based on the specific nature of these substances. The attempts that have been made by Bulloch and Wright to demonstrate the specificity of opsonins for the single forms of pathogenic bacteria cannot be considered as successful. Simon has studied the conditions for several different bacteria, and has come to the conclusion, that a specificity does not exist; his studies have shown that the opsonins form a constant quantity in the blood, and that the degree of phagocytosis, or the number of bacteria taken up by a cell, is influenced by a second factor that is variable. Experiments on the effect of tuberculin injection made with tubercle-bacilli and a staphylococcus, showed an absolute identical course in the rise and fall of the opsonin common for both of them. Although no staphylococcus infection was present in the tuberculous subject experimented upon, the opsonin for the coccus was present in very high percentage. All of these observations demonstrate that opsonin action is identical in character in the blood of all vertebrate animals, that opsonins are not specific and stimulate phagocytosis in a specific way only by the action of some other factor, the nature of which so far has not been discovered. That phagocytosis can take place without opsonins has lately been shown by Tunncliffe, for the fusiform bacilli and the influenza bacilli.

Simon's work, although not yet complete, has demonstrated that we must learn more about opsonins and their qualities, before we can draw such conclusions as have been promulgated by Wright, and have stimulated the arising of therapeutic measures, that after the old *post hoc propter hoc* are alleged in their results to be the proof of the correctness of those conclusions. The main problems of the opsonin action are altogether unsolved. The question of the varying virulence of pathogenic bacteria in regard to phagocytosis is not considered, nor is the character of the bacteria considered, after being exposed to opsonic action. What is the change in them that makes them a prey of the leucocytes; what are the conditions that allow bacteria to be affected by opsonins? If Wright's conceptions were true, bactericidal and other reactive products would be useless; if phagocytosis would be the main source of the elimination of virus, the organism would not have gone to the trouble of adapting itself to so many varying reactive processes. The final outcome of the opsonin study will be the elucidation of these questions; it is liable to show that opsonins are nothing but substances, or qualities, of the blood

facilitating the elimination of bacteria and other obnoxious foreign bodies, that by the action of other and well-known and studied agents have already been made innocuous and form, at the time when they are taken up by the leucocytes, waste material. The further study of opsonins will at least decide the meaning of phagocytosis, whether a primary activity or only a secondary process.

THE ELECTRICAL CHARGE OF TOXIN AND ANTI-TOXIN.—Cyrus W. Field and Oscar Teague (*The Jour. of Experim. Med.*, Vol. 9, No. 1.)—By a very ingenious method the authors have been able to decide whether the toxin and anti-toxin particles were possessed by an electro-positive or electro-negative charge. The attempts to achieve this, made before by Bolton and Pease, and by Roemer, remained resultless on account of the electrolysis (acid reaction of the solvents) produced by the strong current used. Field and Teague eliminated this obstacle by their modification of the older methods. They have determined that both diphtheria and tetanus toxin and their anti-toxins are electro-positive, that is, they pass to the cathode under the influence of an electric current. The character of the charge is not changed by an alteration of the reaction of the solvent. The combination of toxin and anti-toxin would, therefore, seem to represent not a true chemical reaction, but the absorption of one colloid by another. If these observations are confirmed and obtain for other immunity-reactions in the same way, it would be the first positive evidence against the chemical character of the combination, so far held after Ehrlich's theory, and even by physical chemistry.

EXPERIMENTS ON THE LEUKOLYTIC ACTION OF THE BLOOD-SERUM OF CASES OF LEUKAEMIA TREATED WITH X-RAY AND THE INJECTION OF HUMAN LEUKOLYTIC SERUM IN THE CASE OF LEUKAEMIA.—J. A. Capps and J. F. Smith (*The Jour. of Exp. Medic.*, Vol. 9, No. 1.)—The experiments made by the authors on several cases of leukaemia (mostly lymphatic) resulted in the following conclusions: 1. The x-ray produces in leukaemia a disintegration of the leucocytes affecting especially the young forms, viz., the myelocytes and the nongranular, mononuclear cells. A similar action, but one of less degree, takes place in leukaemic blood exposed to x-ray in vitro. 2. The serum of a leukaemic patient who has improved under the x-ray treatment, when injected into animals, causes leucopenia; when added in the hanging drops to the leucocytes of another individual it disintegrates the cells. The strength of the leukolytic action seems to be proportional to the degree of clinical improvement of the patient under the x-ray treatment. 3. The serum of a case of leukaemia which has been exposed to x-ray has a marked agglutinating action on normal red corpuscles and on other corpuscles. The degree of agglutination varies roughly with the degree of leukolysis present. 4. X-ray treatment of normal or leukaemic blood in vitro does not materially alter the phagocytic power of the leucocytes. 5. The injection of a strong leukolytic serum from a patient suffering from lymphatic leukaemia under x-ray treatment into another individual with lymphatic leukaemia, not under the treatment, causes a decided and rapid fall

in the number of leucocytes. The mononuclear cells were principally affected. With repeated injections a partial immunity was established.

Leukolysin is probably formed by the destruction of leucocytes by the x-ray. This action is seen in experiments with leukaemic blood in test tubes exposed to the x-ray, where both the disintegration of the leucocytes and the formation of leukolytic serum can be demonstrated. In the living subject the leucocytes in the circulating blood and spleen may alone be the source of leukolysis; or this function may be shared by the lymphoid cells of the glands and spleen. The latter seems to be more probable, because the formation of leukolysin and evidences of leucocyte destruction are made more marked after exposure of the spleen and glands to the x-ray, than after an exposure of the blood in the test tube. Moreover we know that lymphoid cells, like the leucocytes, are susceptible to x-ray. The nature of this leukolysin remains in doubt. It may be an amboceptor-complement complex or a true toxine.

The study is very interesting and it is unfortunate that the authors did not proceed to establish more details about the physical and chemical nature of this leukolysin. From the natural and normal destruction going on in normal blood it appears to be rather a lytic quantity within the fluid, than due to the products of leucocyte disintegration. Perhaps the x-rays simply enhance this quality.

THE INFECTION OF MAN WITH BOVINE TUBERCLE BACILLI.—A. Weber (*Deutsch. Med. Woch.*, 1906, No. 49.)—This paper by Weber, a member of the German Imperial Health Office, is mentioned here to be recommended as worthy of being read by everyone interested in the relation of bovine tuberculosis to the human disease. The material known so far about this subject is summarized here in an objective and critical way, and represents in fact the sum total of our knowledge up to date. The paper is an impartial consideration and interpretation of the acknowledged facts, and the sum of it is drawn with no undue attempts to prove the one or the other side. The knowledge that bovine bacilli only in exceptional cases cause a human tuberculosis, although local infections, not followed by dissemination, are not so rare occurrences, has during the past two years commenced to penetrate deeper and deeper in our dealing with the human disease. The few exceptions do not play any part in the general measures to be adopted for the elimination of the disease. The latter have only to deal with the human bacillus. That nevertheless, on general principles, the slight danger menacing the human race through the bovine virus, must not be altogether lost sight of, is also the opinion of Weber, and to a degree one can consent to it. With the general endeavor for pure food and hygienic conditions, the products of cattle must be watched as others, aside from the great financial importance, that the ravages of the disease in these animals have on the wealth of the country. While the apprehension of danger from infection with bovine virus must be subdued, the elimination of bovine tuberculosis is a problem, that indirectly belongs to our plans of improving the modes of life. Weber's paper will direct the thoughts of the reader in this direction.

CONTRIBUTION TO THE EFFECT OF INTRAVENOUS INJECTION OF SUPRARENIN ON THE AORTA OF RABBITS.—C. Kaiserling (*Berl. Klin. Woch.*, 1907. No. 2.)—On the basis of eight experiments on rabbits, injected intravenously for 1 to 44 days daily with suprarenin, Kaiserling expresses doubt of the specific character of the aortic lesions found by a number of observers after the same method. The only changes of the vascular system he could discover were a more or less pronounced dilatation of the right ventricle, stasis in the larger veins, and edema and hemorrhages within the lungs. The beginning aorta never showed any changes. This negative result, obtained under conditions identical with those under which others had in the majority of cases positive findings, suggests to the author that the lesions formed by them are not proven to be the specific effect of the suprarenin injections. The fact that he himself has found at the autopsy of a rabbit not treated with suprarenin the lesions described as suprarenin lesions, and further, that Erb has reported a case where, after only one injection, these changes were found, leads him to think that calcareous changes of the aorta in rabbits may naturally occur more frequently, perhaps dependent upon the character of food they are given, or upon the race that is used. He suggests an investigation of the following questions: in what percentage of normal rabbits are calcareous changes of the aorta found; are they related to age; race or way of life; why does the suprarenin effect only occur with intravenous injection, not by subcutaneous; are other methods of increasing blood-pressure of a similar effect; and what is the behavior of other animals? From the uniformity of the reports made of successful experiments, Kaiserling's observations are very startling and ought to be a suggestion of careful autopsy examination of every rabbit dying naturally, or from the effect of experimental procedures.

DIAGNOSIS.

IN CHARGE OF

ALBERT E. TAUSSIG, M. D.

FUNCTIONAL RENAL DIAGNOSIS.—GRUENWALD (*Deutsch. Arch. f. klin. Med.*, Vol. 88, No. 1-3).—The writer's researches were directed towards the attempt to answer the question whether a radical difference exists between the behavior of the kidney in chronic interstitial and in parenchymatous nephritis. It was found that such a difference does exist in the reaction of the kidneys towards diuretics and towards the ingestion of considerable amounts of water and of saline solutions. Whereas, the kidneys in parenchymatous nephritis behave towards these agents approximately like the normal kidneys, the polyuria of interstitial nephritis is affected not at all, the specific gravity hardly at all. This offers a ready means of distinguishing between the two forms and suggests the possibility of influencing the former condition by means of an efficient therapy, whereas the latter condition will probably always remain refractory.

THE PERCUSSION OF THE TRUE CARDIAC BOUNDARIES.—Moritz, Dietlen. (Ibid.)—In Moritz's clinic the following technique is used in percussing out the heart. In determining the right border the plessimeter finger is pressed firmly against the thorax and loud percussion is used. If one begins in the right mammillary line and proceeds towards the heart, a distinct change in the note is observed before the right sternal border is reached. This is still more marked if, after a deep inspiration, the patient is made to expire forcibly, the thorax being still further compressed by the observer's finger. The left cardiac border is best determined by means of gentle percussion during inspiration. The results so obtained coincide well with the x-ray findings. By the ordinary methods, as is well known, we do not determine the true cardiac boundaries, but only the size of that portion of the heart not covered by lung-tissue. Whether the above method is superior to Ebstein's palpatory percussion or to Goldscheider's method, described in the *Interstate* last year, remains to be seen.

DIFFERENTIAL DIAGNOSIS BETWEEN RENAL DISEASE AND PERITYPHLITIS.—Schlesinger. (*Deutsch. Med. Wochenschr.* 1906, No. 44).—Some instructive findings resulted from the observation of a number of cases in Israel's clinic. Red blood corpuscles may appear in the urine of perityphlitis and may be absent in nephrolithiasis when there is an incarcerated ureteral calculus. Pain radiating into buttocks, hips and legs is due to an extra-peritoneal lesion and therefore suggests a renal origin. But the appendix, too, may be extra-peritoneal and may then produce the same phenomenon. Violent pain radiating into testicles and penis speaks for disease of the urinary tract, but bladder disturbances were found sometimes to be due to perityphlitis. Finally, cases of renal colic were observed closely simulating ileus.

THE DIAZO-REACTION IN PULMONARY TUBERCULOSIS.—Weiss (*Wein. klin. Wochenschr.* 1906, No. 44).—The writer greatly prefers the use of paramidoacetphenon in this test to that of sulphanilic acid. Care must be taken to use only one drop of the one-half per cent solution of sodium nitrite, as any but the most outspokenly positive test may otherwise result negatively. He finds that a positive diazo-reaction in pulmonary tuberculosis indicates an unfavorable prognosis, but only if it is constantly present.

RUSO'S METHYLENE BLUE TEST IN TYPHOID FEVER.—Rolleston (*Report of the Metrop. Asyl. B'd.*, 1906; *Abstr. in Munch. med. Wochenschr.* 1906, No. 48).—Russo's test consists in the addition of a few drops of a dilute (1:1000) aqueous solution of methylene blue to a little urine. A green color indicates a positive reaction. The writer found it positive in 44 out of 54 cases of typhoid fever. Of the 10 cases in which it was negative, all but 2 were very light. It is occasionally positive in gastric cancer, pneumonia, scarlet fever and septic endocarditis. He believes it to be of greater diagnostic value in typhoid fever than the diazo-reaction.

EARLY DIAGNOSIS OF GASTRIC CANCER.—Albu (*Deutsch. med. Wochenschr.* 1906, No. 52).—Successful surgical intervention in gastric cancer

is to be expected only very early in the disease, practically never after a tumor is palpable. For the purpose of an early diagnosis, Albu lays great stress upon a progressive, even though slight, loss of weight. All patients, in whom the possibility of a gastric cancer need be considered, should be placed upon a plentiful easily digested diet, which is best given in frequent, small meals. They should be weighed at weekly intervals and if, in spite of a plentiful, apparently well digested nourishment, there is a progressive loss of weight, a carcinoma should be suspected and an exploratory laparotomy seriously considered. If the motility of the stomach is nearly normal, but the hydrochloric acid is absent or nearly so, the food poorly digested and traces of blood pigment are present, the cancer is situated in the fundus. If, on the other hand, the stomach contents are chemically normal or superacid but a considerable degree of diminished motility can be made out, a pyloric cancer may be inferred. In the latter case, repeated examinations of the gastric contents should be made. A steady decline in the degree of gastric acidity will be observed.

He reports two cases of extreme interest. In one case, the patient complained only of epigastric pain independent of taking food. The stomach contents contained a little mucus and no free HCl. The patient was put on a plentiful, nutritious diet, but nevertheless lost 6¼ lbs. in 4½ weeks. At the operation, a flat tumor at the fundus an inch in diameter was found and could be radically excised. It was not palpable, even in narcosis. The other case presented symptoms pointing to hyperacidity. The first examination revealed gastric atony with hypersecretion of HCl. In subsequent examinations the former increased, whereas the latter grew less. The patient, moreover, in spite of adequate nourishment, lost 10 lbs. in 4 months. At the operation a tumor, the size of a walnut, growing on the basis of an ulcer scar, was found. Again complete resection of the mass was possible. Such triumphs of diagnosis are attainable only where the patients have been continuously observed in the most painstaking manner.

THERAPEUTICS.

IN CHARGE OF

W. M. ENGELBACH, M. D.

This department, during the following year, will attempt to classify the new material in therapy as follows: (1) The important literature will be extracted and kept as nearly up-to-date as possible. (2) The new and non-official remedies accepted by the Council of Pharmacy and Chemistry of the American Medical Association will be given space. (3) Medical legislation, which is at the present time in such an important stage of development with regard to therapy, will be briefly outlined. (4) Standard prescriptions of recognized worth will be added to each month's review. (5) Reviews of books on this subject will be found under that special heading.

THE ANTI-TOXIN TREATMENT OF TERTIAN MALARIAL INFECTIONS.—Ford (*Jl. Am. Med. Assn. Vol. XLVIII*, No. 2, page 133).—The serum treatment of malaria has been attempted by the author once before. In the first series the anti-toxin was developed by inoculating rabbits with the defibrinated blood of patients harboring the parasite of tertian malaria or by the bites of mosquitos infected with that protozoon. In the present series the animals employed were monkeys (*Cynomolgus Mendinensis*) and goats. The former animals gave the more satisfactory results. In 34 days the animal which was selected for the production of the serum received four inoculations, each consisting of two cc. of defibrinated human blood containing the tertian plasmodia. Ford, in this article, cites the experiments of a series of inoculations made on humans, two of which were colored and five white, each of whom received one cc. of the defibrinated blood containing the plasmodia. All the white patients developed malaria in from nine to forty days. Neither of the colored patients developed the disease, although one had had an attack the preceding autumn. These human inoculations were in marked contrast with those of animals which failed to show the plasmodia after inoculation. From 21 inoculations he draws the following conclusions: The successive inoculation of monkeys or goats with blood containing the plasmodia vivax (tertian) gives rise in those animals to an anti-toxin which when injected in adequate doses into human beings may be followed by disappearance of parasites from the circulation and the disappearance of the symptoms of malaria. This agent has no apparent influence on infections caused by other varieties of the malarial parasite. From these results it is suggested that a serum for yellow fever may be discovered along similar lines of investigation. It is believed that an anti-toxin against malaria will develop to be of practical value as a prophylactic measure, if not also a curative agent.

ROENTGEN RAY TREATMENT OF LEUKEMIA.—MARAGLIANO (*Gazzetta Degli Ospedli*, Vol. XXVII, No. 132).—The spleen and the glands in the neck were exposed; the bones were not exposed. Glands distant from the exposure decreased in size. This occurred before there was any change in the blood findings. The benefit derived in these cases persisted for a year and a half. Maragliano thinks by exposing larger areas,—especially the neck, in addition to the exposure of the spleen,—more rapid results would be possible than have hitherto been supposed. The curative process he attributes to a kind of auto-serotherapy. By filtering the rays through diachylon he eliminates the non-penetrating rays which are liable to affect the skin injuriously. This allows a more copious use of the curative rays.

THE TREATMENT OF CHRONIC INTESTINAL CATARRH.—ROSENHEIM (*Deutsche Med. Wochenschr*, 1906, No. 25).—The symptoms and the etiology of the different varieties of the processes causing intestinal catarrh are given by the author. The treatment is divided into that of enteritis, enterocolitis, and colitis. He recommends the following for enteritis: Depending upon whether there is putrefaction or fermentation the diet must be regulated accordingly. In general, the diet should be

non-irritating and easily absorbed. Secondary conditions (processes of the stomach and large intestine) which usually produce the vast majority of the symptoms must be treated according to the special indications. (2) For enterocolitis the diet should consist of richly albuminous material. When there is much co-existing inflammation of the large intestine, fruit and vegetables should be added in abundance. Fats should be given in the form of butter ($\frac{1}{4}$ pound per day), and oils also when these are well borne by the upper intestine. The medication recommended is tannocal, $\frac{1}{2}$ teaspoonful 2 or 3 times daily; bismuth sub-nitrate, calcium phosphate of each $7\frac{1}{2}$ to which can be added four grains of ex. belladonna. Knife point of this is taken after eating. (3) For hemorrhagic colitis a suspension of bismuth is especially recommended as a rectal injection. Mineral waters are only recommended for the mild forms. For the constitutional symptoms arsenic and iron, as it occurs in certain mineral waters, are given per rectum.

REGULIN TREATMENT OF CHRONIC HABITUAL CONSTIPATION.—SCHMIDT (*Munch. Med. Wochenschr.*, 1906, No. 30).—Regulin is a 20 per cent extract of cascara in agar as used by Schmidt. Helfenberg, in 25 patients, obtained good results in 80 per cent with this treatment. He gave one to two teaspoonfuls in potato soup, or with apples, once daily without any change in the diet. As early as the third day after this, there resulted an easy soft stool; no discomfortable symptoms were observed. The treatment was stopped after 14 days, or the amount was decreased. The action of regulin is largely mechanical. It takes up 17 times its own volume of water and by this means produces a voluminous, soft stool.

REPORT ON THE SERUM TREATMENT OF HAY FEVER.—BORROWMAN (*Scottish Med. and Surg. Jl.*, 1906, No. 3).—Borrowman reports the unfavorable results of Dunbar's "pollatin" on himself. This resulted in edema of the conjunctive and mucous membrane of the nose. He was apprehensive lest this edema might proceed to the glottis and thus cause a dangerous condition. It is needless to say that he discontinued the use and commendation of this form of therapy.

TREATMENT OF TUBERCULAR GLANDS OF THE NECK BY THE X-RAY.—FELDSTEIN (*N. Y. Med. Jl.*, January 5, 1907).—Feldstein concludes regarding this method of treatment as follows: (1) Glands should be treated by the x-ray if there is no softening or caseation. (2) Softened or caseous glands should be referred to the surgeon. (3) Post-operative x-ray treatment is important if there is any doubt of remaining glands which might be infected. (4) For cosmetic reasons the x-ray may be used. (5) The size of the glands does not influence the successful result of the treatment.

INTRAVENOUS INJECTIONS A THERAPY OF THE FUTURE.—HAHN (*Amer. Medicine*, December, 1906).—This exhaustive article includes the history, the development and the detailed technique of intravenous therapy. The author summarizes his conclusions as follows: "(1) Especially fitted

for intravenous treatment are 'dyscrasic' and dystrophic affections, disorders of metabolism, blood diseases, septic infections, cardiac insufficiency, syphilis. (2) Cinnamylic acid, quinin, sublimate, salicylates, the derivatives of digitalis, fibrolysin, arsenic and iron, collargol and formalin are the drugs so far used. (3) The advantages of the method are: (a) Avoidance of digestive and other troubles or by-effects, (b) exact dosage, (c) administration at greater intervals of time, (d) a more direct and therefore a more rapid action, (e) a more energetic effect, (f) relative painlessness when compared with hypodermic injections. (4) The technique is not easy. It has to be learned and carefully observed. (5) I believe that intravenous medication is exceedingly valuable in many conditions. While I am sure that it will have a certain future, I am no less sure that the oral administration of drugs will always remain the standard procedure."

AN ANALYSIS OF THE KIDNEY CONDITION OF 800 CASES OF SCARLET FEVER TREATED WITH ROUTINE DOSES OF CHLORAL-HYDRATE.—ROYER (*Therapeutic Gazette*, January 15, 1907).—The author by means of scientific comparison contrasts this method of treatment in 800 cases with 756 cases having the usual remedies. The following conclusions are drawn: (1) Chloral-hydrate is of distinct value in the treatment of scarlet fever, and when used in doses of sufficient size to secure light somnolence does not seem to be a circulatory depressant. (2) Chloral-hydrate ameliorates nervous symptoms better than any remedy yet suggested in the treatment of scarlatina. (3) Chloral hydrate allays the itching of the skin often found annoying in scarlet fever. (4) When chloral hydrate is given routinely during the febrile period and for some days thereafter, post-febrile nephritis appears to be less frequent. (5) This study would seem to justify the more extended use of chloral in the treatment of scarlet fever, and a more detailed study as to how it acts on the kidney itself.

SOME FACTS ABOUT DIGESTIVE FERMENTS.—SOLLMANN (*Journal of Amer. Med. Assn.*, February 9, 1907).—The author reviews the effects of the different digestive ferments and their actions and indications, especially as they are found combined in the various preparations on the market. He confirms the findings of previous writers that the different ferments are incompatible in combination thus becoming inert and not fulfilling the conditions for which they are given. He also convincingly demonstrates that the reaction of the different preparations would produce conditions in which these ferments could not act. From this confirmation absolute deductions are drawn showing the uselessness of almost all the preparations now so extensively recommended to the profession.

The following drugs have been tentatively accepted by the Council of Pharmacy and Chemistry of the American Medical Association:

Thiosinamine (.03 to .1 Gm., $\frac{1}{2}$ to $1\frac{1}{2}$ grains; subcutaneous injection .05 to .2 Gm., 1 to 5 grains in 15 per cent alcoholic solution, or 10 per cent glycerinated aqueous solution.) Action and uses: absorption of

exudates lymphatic swellings, and scar tissue. Indications: lupus, glandular tumors, scars, corneal opacity, chronic deafness. Triferrin (.3 Gm., 5 grains.) Action: that of iron and lecithin. Indications: anemia, chlorosis, neurasthenia, rachitis, and general debility. Triferriol (16 cc. four fluid drams.) Action and indications: substitute for triferrin. Trikresol (liquid said to consist of 35 per cent orthocresol, 40 per cent metacresol, 25 per cent paracresol.) Trional (triolymethylene, internally .3 to 1. Gm., 5 to 15 grains; externally, 10 per cent suspension in collodion.) Tritipalm (48 cc., 1 to 2 fluid drams). Triphenin (antipyretic .25 to .6 Gm., 4 to 10 grains. Antineuralgic 1. to 1.3 Gm., 15 to 20 grains.) Action: antipyretic, analgesic, and hypnotic. Action is slower and milder than phenacetin. Indications: typhoid, pneumonia, pleurisy, influenza, erysipelas, tuberculosis, neuralgia, sciatica, migraine, etc. Tropacocaine Hydrochloride (3 to 10 per cent aqueous solution.) Action: local anaesthetic. Tumenol (5 to 20 per cent ointment or 10 per cent solution in water, glycerine, or soap plaster. Action: non-toxic and non-irritant, protective and palliative to the skin. Indications: eczema, excoriations, erosions, ulcers, burns, etc. Tumenol Sulphone (undiluted for penciling.) Actions and indications: same as tumenol. Tumenol Sulphonic Acid (powder 5 to 10 per cent, paste without zinc oxide in 2 to 5 per cent aqueous solution.) Actions and indications: same as tumenol. Tusol (.05 to .5 Gm., $\frac{1}{2}$ to 8 grains.) Action: antipyretic analgesic with a stimulating action of mandelic acid. Indications: whooping-cough. Urethane. Uriform (48 cc., 1 to 2 fluid drams.) Uritone. Uropherin-B (.3 to 1 gram, 5 to 15 grains.) Action: diuretic. Indications: dropsy, nephritis, diseases of the heart, and genito-urinary organs. Uropherin-S (same as Uropherin-B.) Urotropine. Urotropine-New.* Valyl (.125 Gm., 2 grains in gelatin capsules, 2 to 3 capsules with or after meals.) Action: sedative, anti-spasmodic, nervine. Indications: neuroses, neuralgia, menstrual irregularities, insomnia, etc. Veronal (.3 to 1 Gm., 5 to 15 grains.) Action: hypnotic. Indications: neuroses, and mental disturbances. Vibutero (8 cc., 2 fluid drams.) Vinum Extracti Morrhuae (15 cc., 4 fluid drams.) Action and indications: substitute for codliver oil. Xeroform (1 to 3 Gm., 15 to 45 grains per day for adults; .12 to .3 Gm., 2 to 5 grains for child; externally as a dusting powder.) Action: non-irritant, non-toxic, antiseptic. Indications: ulcer cruris, eczema, gastrointestinal catarrh, proctitis, dysentery, diarrhea, cholera-infantum, etc. Adnephryn Suppositories. Albargin (.2 Gm., 3 grain tablets.) Actions and uses: substitute for silver nitrate. Alypin (10 per cent solution externally; 1 to 4 per cent solution hypodermically.) Action: local anaesthetic. Anthrasol (5 to 10 per cent ointment, 10 per cent ointment with glycerite of starch, 20 to 30 per cent ointment or paste.) Action: antiseptic, parasiticide, keroplastic, antipruriginous. Indications: chronic or subacute skin diseases. Chloralamid (chloralformamidum U. S. P.) Collargol (15 per cent ointment, 2 to 5 per cent for intravenous injection, 1-50 to 1 per cent solution for washes, 5 per cent dusting powder, .2 Gm., 3 grains suppositories, .5 to 1 per cent for muscular injections. Internally a teaspoonful of 1:500, 1:100 solution or .06 Gm., 1 grain tablet.) Action:

antiseptic and germicide. Indications: general conditions requiring this action internally or externally. Collargol Ointment (*ungeuntem crede*) (2 to 4 Gm., 30 to 60 grains.) Cresylone (*liquor cresolis compositus U. S. P.*) Cupro-Hemol (.5 Gm., 8 grains.) Actions and indications: tuberculosis, scrofula, anemia, chlorosis. Euformol (greatly diluted.) Action and indications: germicide, antiseptic, deodorant, especially for excreta in infectious diseases. Exodin (.5 Gm., $7\frac{1}{2}$ grains for adult.) Action: cathartic. Indications: acute and chronic atonic constipation. Haemoferrum (4 to 8 cc., 1 to 2 fluid drams.) Iothion (25 to 50 per cent ointment.) Actions and indications: substitute for iodine and iodides as a local application.

PRESCRIPTIONS.

Twitty states that he has given the following method of treatment a very extensive and careful trial and has no hesitation in recommending it in incipient tuberculosis. The wide experience not only of himself but of other reputable physicians has put this method of treatment beyond the experimental stage. The following is the original prescription:

R. Iodi, gr. x-xxx .60 to 2. Gm.

Carbonei disulphidi 1 fluid ounce, 30.

Five drops on gauze in an antiseptic inhaler. Inhale through mouth and exhale through nostrils from three to five minutes, slowly at first. Repeat from three to six times a day. It is needless to add that this measure is merely an adjunct to the other treatment.

SURGERY.

IN CHARGE OF

M. B. CLOPTON, M. D.

NEW METHOD OF JEJUNOSTOMY.—L. CHEVIER (*Gaz. des Hopitaux*, Jan. 10, 1907).—In an article, dealing only with the technique of the operation, is described and well illustrated a trans-omental operation, with a vertical suspension of the jejunum, and the formation of two transverse folds in the gut wall, which, together with a sphincter formed from the rectus, gives an opening that does not leak and yet allows the passage of the duodenal contents. A 10 centimeter incision is made 2 centimeters to the left of the median line, with its middle opposite the umbilicus. The great omentum is divided and the jejunum is picked up about 30 centimeters below the end of the duodenum. Beginning 2 centimeters from the mesenteric attachment on either side a transverse fold about 2 centimeters deep is turned in with fine silk. This fold is turned in above and below the intended point of opening. Two traction sutures are then placed on either side of the intended opening and after the gut has been stitched in the peritoneal opening, these traction sutures are crossed over and brought out behind narrow strips of the rectus muscle and when the skin is finally closed these traction sutures are drawn snugly and anchored,

thus throwing the strips of rectus muscle to the opposite side of the wound and forming the sphincter. Several days later, after healing of the parts, the opening in the gut is made with the thermo-cautery.

ACUTE UNILATERAL SEPTIC PYELONEPHRITIS.—DAN'L N. EISENDRATH (*Am. Jour. of the Med. Sc.*, Jan., 1907).—A Class of cases of unilateral involvement of the kidneys of various types, either an ascending catarrhal pyelonephritis, or multiple miliary foci of suppuration, or a hyperacute form where the disease is so rapid that there is no time for the formation of foci, or more rarely a few large abscess cavities, or a gangrene of the pelvis and parenchyma, are now recognized and demand surgical interference. The infection comes from the urine or from the blood, in the first instance most frequently ascending from a cystitis, or an unclear ureteral catheterization, or the infection begins in cases of hydronephrosis or lithiasis. When the infection comes through the blood it is most frequent after a subcutaneous injury to the kidneys, or in children as a result of the catarrhal condition of the intestines or a stagnation of the fecal current. Septic emboli in the parenchyma are likely to follow acute infectious disease, or suppurative processes in any part of the body. Pain, tenderness and rigidity over the kidney, pyuria, renal colic, chills, fever, occasionally anuria, either with or without previous history of calculus, are the most characteristic symptoms. Urinary antiseptics, with large amounts of milk and water, may succeed in the milder cases. The bladder should be irrigated with weak silver nitrate solution, but never catheterize the ureters on account of the danger of infection. Nephrotomy, with the opening of the various infected points, will suffice in some cases, but the severe form will demand the removal of the kidney. Thirty-four cases of nephrotomy with 28 recoveries, and 27 cases of nephrectomy with 25 recoveries, are found in the literature.

INCOMPLETE OCCLUSION OF THE ABDOMINAL AND THORACIC AORTA BY METAL BANDS.—HALSTED (*Jour. Am. Med. Ass.*, Dec. 29, 1906).—An aluminum band is used which can be manipulated either by an instrument or by the fingers to encircle a vessel, either completely or partially occluding the lumen. The bands were used experimentally on 100 dogs, and it was shown that the blood pressure below the band varied with the amount of occlusion. Partially occluding bands produce no macroscopic change in the vessel wall even after months, but when the lumen is almost but not occluded, complete occlusion may result spontaneously, and gives the ideal closure of an artery. In about three months after operation, a large extra-dural deposit of fat was noted in the spinal cord below the site of occlusion of the aorta. Partial occlusion of the large vessels can be used as a cure for aneurism. Dr. Halsted has successfully used the metal bands in the human subject, once to partially occlude the innominate, the common carotid four times, and once to completely occlude the femoral. The use of ligatures in large vessels is usually followed by cutting through and secondary hemorrhage.

A NEW METHOD OF CLOSURE IN ANASTOMOSING THE INTESTINES.—FLINT (*Archiv. f. Klin. Chir.* B. 80, Heft 4).—The method is used in

lateral anastomosis of either the stomach to small intestine, or intestine to intestine. After the closure of the ends of the gut the two pieces of gut are laid side by side and a running or interrupted suture is placed as for any lateral anastomosis. An instrument devised by the author, called a needle pointed scissor, is then used. It varies in length from 16 centimeters to 25 centimeters, and consists of two arms, one 10 centimeters longer than the other, pivoted at one end, the parts nearest the pivot being sharpened like scissors and tapering to the ends like heavy needles. The long arm is introduced into the lumen of the gut, carried along it and emerges, including between these two points the subsequent line of incision in the bowel. The other shorter arm is in the same way introduced into the other bowel. The ends of the needles which have been soiled by the intestinal contents are then covered with rubber tubing, and using the instrument as a fixation appliance the front row of suturing is continued, leaving, however, at either end two sutures that are not tied. The instrument is then slipped along in the gut until the scissor edges are opposite the intervening gut walls, and the gut is divided by closing the instrument tightly. The instrument is then withdrawn backwards, and the end sutures tied. In the fact that the peritoneum is not soiled with intestinal contents he finds that the sutures are not irritated, and there is little or no scar tissue. It offers a rapid method, which has the advantage of an immediate bowel opening. There is no hemorrhage, the author claims, and the suture is particularly strong. He has used it experimentally very many times without a single failure. It was devised and used before Werelins described his method and Flint says that it has an advantage over the string method, because he found an occasional hemorrhage after Werelins' plan.

A NEW METHOD OF LATERAL ANASTOMOSIS.—WERELINS (*Surg. Gynec. and Obstet.*, Vol. 11, No. 3).—The guts are sutured along the anastomotic line and then a silk twine or silver wire suture is introduced as in the McGraw ligature, and the anterior line of suture is done, leaving one end of the suturing loose. The guts are held firmly by an assistant and by alternately pulling the right and left ends of the silk, or silver wire ligature, the tissues are cut through and an anastomotic opening made. The beginning and end of the suture thread are then tied and the operation is over. The technique is simple and fast, no chance for infection, no shock, no puckering of tissue, no foreign body, and the operation is complete at once. He has used it successfully five times in humans, many times in dogs, and never has seen hemorrhage. He has never seen the cutting thread run into the suture line; while the cutting thread may break it seldom does, and this objection could be overcome by using silver wire, or introducing two cutting threads and using only one, unless it breaks.

EARLY OPERATION IN CASES OF INTRACRANIAL INJURY.—CHARLES PHELPS (*Annals of Surgery*, Dec., 1906).—It is evident that operative interference in intracranial injury is practiced too often without due consideration of the probable nature of the lesion, and prolonged unconsciousness is regarded by some as a sole and sufficient reason for entering the cranium. Unconsciousness, as a diagnostic and operative indica-

tion would be invaluable, provided the earlier history of the case could be obtained, which is most frequently impossible. The main symptom to be studied to interpret unconsciousness is temperature. Immediate unconsciousness after a cephalic injury is due to diffuse contusion, if preceded by a conscious interval, although brief, or a conscious stage intervenes before deep unconsciousness, there is some form of intracranial hemorrhage. Several hours of unconsciousness with a stationary temperature one or two degrees above normal, means a fairly profuse hemorrhage without serious brain injury, but a higher temperature, which increases with possible recessions, points to a visceral lesion. The basic distinction is between epidural and subdural lesions. Explore the soft parts, or elevate the bone if it is depressed. A linear fracture with associated deeper lesions, demands further consideration. Meningeal contusion occasions hemorrhages which are included by some within operative sphere. Cerebral contusion is manifest by hyperemia and edema of the brain, either localized or diffuse. Meningeal contusion is intermediate between epidural and cerebral lesion, not only topographically, but in symptomatology and diagnosis, and if operation is proposed, in prognosis. Subdural hemorrhages, if too large to be confined in the pia, spread over large or small cerebral areas, and are complicated by cerebral lesions which afford the dominant symptoms. If cranial fracture can be excluded it is probable, in the proportion of six to one, that the hemorrhage is subdural, and if cerebral symptoms are not prominent that it is pial rather than cortical. By statistics it is shown impossible to diagnose between an epidural and pial hemorrhage. A hemorrhage can be only indirectly located. Lesions of the brain itself give symptoms of disorders of mind, pulse, temperature and respiration, muscular system, sensation, loss of urinary and fecal control, occasional disorders of special senses, and variations of size and reaction of pupils. The loss of consciousness is common in all forms of intracranial injury, and is the only effect which directly results from either of the superficial hemorrhages. Delirium is always a symptom of complicating cerebral injury. Hemiplegias, in basal fractures are the results of hemorrhage. The question of operation is largely one of diagnosis, which is difficult, and what the operation may be expected to accomplish and is it practicable and will it improve the patient's chances? In easy operations for epidural hemorrhage the object is to remove pressure, and is without risk. The longer the cerebral compression lasts, the more probable the damage to the cerebral cellular elements will be permanent, so if it is decided to operate no delay should follow. If coma deepens, temperature declines and pulse weakens, the hemorrhage is continuing and the only hope is to reach and check it at its source. In many rapidly recovering cases, or fast declining ones, the question of operation will not rise, but a considerable number with severe symptoms remain stationary, or improve only slowly, and these are the cases hard to decide. Subdural injuries are always severe and operative interference is attended with great risk from shock, sepsis, hemorrhage and cerebral hernia, and there is the greatest uncertainty of the advisability of operation, and what might reasonably be accomplished by an operation. Lacerations of the brain, or severe general contusions offer little or no hope of operative relief, and limited contusion can never suggest operation. General hyperemia and

edema is a direct cause of death in most cases, and only a very small proportion of cases are amenable to the operative relief of intracranial pressure. Some cases of cerebral contusion show such severity that they never suggest operation, and experience teaches that they are destined to die no matter how treated. In 1,000 cases there is not a single instance where the temperature passes 105° that the patient recovered. In cerebral contusion complicated with pial or epidural hemorrhage, operation should depend on the relative importance of the lesion.

ORTHOPEDIC SURGERY.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

TREATMENT OF TUBERCULOUS ABSCESES.—Starr (*Brit. Med. Jour.*, 1906, ii., 923.)—The abscesses which follow tuberculous disease of the bone add no danger to the local or general condition, so long as they remain quiescent, as closed sacs, and do not become infected. A considerable proportion of these abscesses will disappear where proper treatment is instituted for the relief of the bone condition. Where the abscess is allowed to open of itself, it invariably becomes infected with septic organisms. If such an abscess burrows too close to the skin, infection may arise from organisms that gain entrance through hair follicles or sweat glands; or the skin may become invaded with tuberculous disease. The treatment of these abscesses may be undertaken in several ways. The author advises against aspiration, also against the injection of germicidal agents into the abscess cavity. The excision of the sac entire is usually out of the question, unless the abscess be small and quite accessible to such procedure. Treatment by incision and drainage results in a long continued discharging sinus, which often endangers the life of the patient. Incision, evacuation of the contents, curetting of the walls of the abscess cavity, and complete closure of the wound, done under the most aseptic technique, affords the treatment of choice. The author reports 55 cases so treated, only 7 of which afterwards broke down, while the remaining 48 were permanently closed, after periods varying from four months to six years. Five of the cases required a second evacuation of contents, and one case a third.

BIER'S TREATMENT IN TUBERCULOSIS AND ACUTE INFECTIONS.—Aufret (*Rev. d'Orthopédie*, 1906, 481.)—Congestion of the affected part is the object of the three different modes of treatment employed by Bier to the very diverse conditions of infection, acute and chronic, and non-infectious troubles. These three modes of treatment are: Hot baking, compression by the elastic bandage, and aspiration with cupping-glasses, or a surgical apparatus. For non-infectious conditions, he advises hot baking and aspiration, in such conditions as chronic rheumatism, arthritis deformans and old edemas. The cupping apparatus should be used on local infections, where pus has already been formed, particularly

in mammary abscess, buboes, furuncles and lymphatic glandular abscesses. The elastic bandage has an anodyne effect upon the extreme pain characterizing gonorrheal arthritis. It is also to be employed in acute arthritis, early metastatic foci and infected wounds. In the presence of grave suppuration, the first indication is to make a free incision for the escape of the pus. The elastic bandage here facilitates the escape of pus after incision, and permits, in many cases, the early stoppage of packing and drainage.

ON COXA VALGA.—B. Galeazzi (*Amer. Jour. Orth. Surg.*, Jan., 1907.)—Although recent clinical researches have confirmed us in our opinion that anomalies in the direction of the femoral neck are but the anatomical results of affections of a different nature, the abnormality of angulation called coxa valga is a condition concerning which little is known. Leaving out the cases due to traumatic origin, or those following paralysis, rickets, or congenital dislocation of the hip, the author claims the distinction of reporting the first case not accompanied by these lesions, to which this cervical anomaly pertains. He makes two observations and verifies them with x-ray photographs. He believes that we cannot consider coxa valga as a static deformity, but that these anomalies in the shape and direction of the femoral neck have their origin in functional disorders in the process of osteology of the femoral head. The symptoms were as follows: pain in the region of the hip-joint, which increased after prolonged rest, and disappeared during dorsal decubitus; real lengthening of the leg, and the apex of the tuberosity of the great trochanter, below the line of Roser-Nelaton. There is a characteristic gait in walking, due to the obliquity of the trunk and the outer rotation of the leg. The patient is inclined to hold the trunk towards the side of the coxa valga. The causes of these symptoms are that the line of gravity does not pass normally through the femur, as the patient walks or stands. In both cases reported, the author practiced osteotomy under the periosteum of the femoral neck at the spot of its insertion in the shaft. The normal angle between the neck and shaft was then re-established. Both cases resulted favorably.

AN EXPERIMENTAL STUDY OF THE INFLUENCE OF NECROSIS, PRODUCED BY SUTURES, IN TENDON-SUTURE AND TRANSPLANTATION.—David Silver (*Amer. Jour. Orth. Surg.*, Jan., 1907.)—The first requirement of any method of suture is that it afford sufficient strength to maintain apposition during the process of repair; second, that it shall not exert sufficient tension to produce necrosis. In order to determine, if possible, what the real danger of necrosis is, three series of experiments were performed on rabbits. The technique in all cases was similar. The skin over the outer aspect of the legs was thoroughly cleansed. The tendo Achillis was exposed and subjected, after division, to suture, in order to determine, first, the degree of necrosis of tendon-tissue, produced by sutures, tied under the highest tension possible; to determine the degree of necrosis of tendon-tissue, under the highest tension of suture, the tendon not being divided; to determine the same facts where the tendon was grafted into another tendon. The author concludes that the yielding of

tendon in tendon-suture and transplantation, through necrosis produced by overtight sutures, must occur, if at all, very rarely when the sutures are tied under ordinary tension; that the failure of sutures through insufficient hold is fairly common; that the process of repair is slower in tendon-transplantation than in tendon-suture and tenotomy, due to interference with circulation and defects in the synovial sheath. Care should be taken, therefore, not to separate the tendon from surrounding tissue to any greater extent than is absolutely necessary.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON, M. D.

THE RADIOTHERAPEUTIC TREATMENT OF HYPERTROPHY OF THE PROSTATE.—Tansard and Fleig (*Ann. des Mal. des Org. Urin.*, Dec. 15, 1906.)—Two cases of prostatic hypertrophy are reported in which improvement followed the use of the Roentgen ray. The authors state that decided amelioration takes place from the radiotherapy in hypertrophied prostates through atrophy of the gland. As the perineal region, which appears to be the best point for applying the rays, is very sensitive to them, the irradiations should be very prudently conducted. The treatment by this means is especially indicated in prostatics that have not reached the period of retention; in young prostatics; in those who are dependent upon the catheter and are not obliged by reason of their social position to obtain a very rapid cure; in those with infected bladders; in the very aged; and in those with renal lesions.

PROSTATIC ALBUMEN AND ALBUMOSE.—Ballinger (*Southern Med. & Surgery*, December, 1906.)—The presence of albumen and albumose in the urine voided after massage of the prostate, when the urine before massage is normal, is as reliable in the diagnosis of prostatitis or an abscess draining into the urethra, as renal albumin is in the diagnosis of kidney disease. Their presence was constantly found in thirty patients with inflamed prostates. The test was negative in eighteen patients with healthy prostates and vesicles. The recognition of this prostatic and vesicular proteid affords a very simple method of making a positive diagnosis of marked prostatitis and vesiculitis, as well as the mild, obscure cases, whether a microscope be at hand or not. Owing to the alkalinity of the prostatic secretion and to the fact that deutero albumose, the proteid constantly found in chronic cases, is not precipitated by boiling, the heat test as ordinarily applied will not be satisfactory, as many times no cloudiness will appear in the part of the urine boiled. Picric and citric acid will, however, produce a cloudiness, or precipitate, if added to the boiling urine and allowed to stand until cool. This will disappear again when heated if due to albumose.

Robert's solution as modified by Boston, containing one part of nitric acid to ten parts of a saturated solution of magnesium sulphate, applied

as a layer test, will demonstrate very small quantities of albumen or albumose. The writer believes that spermatorrhea, instead of being a neurosis, as most authorities claim, is due to a patulous condition of the seminal ducts and is really caused by a low grade inflammation of the seminal vesicles and ampullations of the vasa deferentia.

The inflammation causes an increase in the secretion and this mechanically washes out the spermatozoa when expressed by muscular exertion or otherwise.

DRAINAGE OF THE PREVESICAL SPACE THROUGH THE PERINEUM IN SUPRAPUBIC CYSTOTOMY.—Belfield (*Annals of Surgery*, Jan. 1907).—Suprapubic cystotomy admittedly affords the best access for intravesical operations, and when primary union of the incision is secured leaves nothing to be desired. Usually primary union is not secured and leakage into the prevesical space commonly occurs in spite of all efforts to avert it, inviting infection, sepsis, pneumonia, and compels prolonged confinement to bed. To overcome this the author suggests drainage of the prevesical space into the perineum. When ready to close the wound the membranous urethra is opened on a grooved staff; the gorget introduced and staff withdrawn. A small trocar and canula is passed from above along the anterior surface of the bladder and prostate into the groove of the gorget. The trocar being withdrawn a few silkworm strands are threaded through the canula and along the gorget out through the perineal wound. A large, soft catheter is introduced into the bladder for perineal drainage, the suprapubic incision, bladder and abdominal wall are completely closed except where the threads protrude, the anterior bladder wall being anchored near the recti muscles. Any urine which may leak through the bladder wound and tissue fluids find ready exit at the bottom of this space.

DRAINAGE OF PROSTATIC ABSCESES THROUGH THE ISCHIO-RECTAL FOSSA.—Lusk (*Annals of Surgery*, January, 1907).—This operation is suggested for cases of prostatic abscesses which have not ruptured into the urethra and present a tense elastic tumor, bulging toward the rectum. It is not recommended for cases where the abscess is ruptured into the urethra, when the operation of perineal section would be undoubtedly indicated. As compared with simple drainage of a prostatic abscess by the anterior, perineal incision, going between the bowel and the urethra triangle, drainage by this diagonal, lateral incision and approach through the ischio-rectal fossa, seems to have the preference for the following reasons: The route is direct and easily accessible; no danger of injuring the rectum or urethra and the scar is smaller and latterly situated.

Details of the dissection necessary and the after-treatment in these cases are entered into by the writer.

CHRONIC URETHRITIS AND AN IMPROVED METHOD OF APPLYING MEDICATION TO THE URETHRA.—Gardner (*Medical Record*, December 22, 1906).—The writer refers to the treatment of this condition in general, drawing attention especially to that of packing the urethra with gauze,

impregnated with various medications, and draws the following conclusions:

1. The worst complication that is likely to follow a chronic urethritis is a stricture, consequently this should be borne in mind during the entire treatment.

2. The pathology is essentially a chronic inflammation of the sub-epithelial tissue (and especially around the follicles,) which passes through two stages, that of infiltration and that of contraction.

3. All authorities agree that these soft, recent exudates may be absorbed before organization has set in. The most rational method of forestalling a stricture is by packing the urethra.

4. The medication is in close contact for hours with the follicles and depressions, where germs are protected from irrigations and injections. The exudate thrown out around these follicles is frequently the starting point of stricture.

5. No other treatment combines so many beneficial factors, i. e. dilatation, massage, medication uniformly applied to the entire membrane and depressions and for a considerable length of time.

PRESENT OPERATIVE NECESSITIES FOR THE CURE OF TUBERCULAR ORCHITIS.—Barnett (*Internat'l Jl. of Surg.*, January, 1907.)—After a resume of the literature in consideration of the subject, the author sums it up as follows:

1. To be sure of a cure, all that is infected with tuberculosis must be removed.

2. Primary invasion statistics are so variable that the operator should consider testicular tuberculosis primary, unless other foci be found that disprove the supposition.

3. The modes of infection are so many that the surgeon should be on his guard constantly. This is especially true as regards infection during the act of cohabitation.

4. The desexation "bug-bear" should be entirely removed from the patient's mind, and instead, encouragement should be given him for a continuation of his copulative power.

5. Injections of paraffine in the production of artificial testes are of value from a cosmetic standpoint, and also because of the great satisfaction they afford the patient. This procedure is entirely devoid of danger when properly done.

6. Operations, when indicated, should be immediate; followed by prophylactic and hygienic treatment until the maximum improvement is gained.

OBSTETRICS AND GYNECOLOGY.

IN CHARGE OF

HUGO EHRENFEST, M. D.

SPONTANEOUS EXPULSION OF A CARCINOMATOUS UTERUS AFTER CAUTERIZATION WITH ZINC CHLORIDE.—Blau (*Zentralbl. f. Gyn.* No. 4, 1907).—This article records a most uncommon and peculiar observation. A woman of 64 years was admitted to Chrobak's clinic in Vienna with a cervical carcinoma and a pyometra. After dilation of the cervix the retained pus escaped and for the next few days an attempt was made to stop the profuse secretion of pus from the large uterine cavity in order to reduce the risk of infection during the contemplated radical operation. Peroxid, tincture of iodine, brom-alcohol, etc., were used without effect. Therefore, finally, a strip of gauze soaked in a 30 per cent solution of zinc chloride was introduced into the uterus and left 14 hours. The purulent discharge continued in spite of further treatment, when on the eighth day after the application of the zinc chloride the writer saw a greyish necrotic mass lie in the vagina. It was carefully pulled out and found to be the whole uterus. The microscopic examination of the specimen showed the corporeal carcinoma and typical uterine wall, but no peritoneal cover. A few days later an examination was made. The finger entered above the vagina a small cavity, apparently lined with a smooth membrane through which intestinal loops could be distinctly palpated. The patient made an uninterrupted recovery, and two months later was still enjoying good health. It would seem that the demarcation of the necrotized uterus took place just below the peritoneal cover. Of course it can not be definitely stated whether this spontaneous elimination of the carcinomatous uterus means a total elimination of all cancerous tissue. A slight hardening felt in the parametria could possibly have been due to an inflammatory infiltration. The writer in this connection quotes a few cases recorded in literature in which cauterization with zinc chloride undoubtedly effected the complete necrosis and thus cure of cervical cancers. This observation of Blau is interesting and noteworthy in that it clearly demonstrates the advantages and the possible dangers of the use of zinc chloride in concentrated solutions.

THE OCCUPATION OF THE PREGNANT MOTHER AND DEVELOPMENT OF THE FETUS.—G. Merletti (*Wien. klin. therap. Woch.* 38, 1906).—A normal development of the fetus guarantees greater resistance against the common causes of the high mortality and morbidity of early infancy. A harmful effect upon the development of the fetus and the normal progress of pregnancy often is exerted by work in certain factories. As such the writer mentions factories in which extensive use is made of mercury, mercury preparations, phosphorus, arsenic, sulphur, copper, chrom, zinc, brass, mangan, baryum, lead, etc., chemical factories in which the employees inhale irritating or poisonous vapors, resin, tar, etc., especially distilleries and tobacco factories.

Of a distinctly harmful character is the effect of steady employment

in the textile industry. Much less dangerous is the occupation in a trade which permits life in the open air. The following table is given of the average weight of children born by 2,054 working women: Housewives, 3100 grams; farm work, 3093 grams; servants, 3040 grams; private work, 3039 grams; factory work, 2929 grams.

It can be said that exhausting work, especially if combined with trade poisoning, deprives the pregnant mother of a certain amount of vitality which is essential for the proper development of the fetus in the uterus.

THE CRUSADE AGAINST CANCER OF THE UTERUS.—W. A. Milligan (*Jour. of Obst. of Brit. Emp.* Jan. 1907).—The paper is a review of the work that has been done in different countries in an effort to ensure earlier diagnosis and more prompt treatment of uterine cancer. Winter, of Königsberg, must be regarded as the pioneer in this movement. In 1891 he published a paper dealing with the early diagnosis of cancer. Since this time numerous articles have appeared from his pen dealing with the question of cancer in all its aspects. The most important contributions in this problem are his monograph on the crusade against uterine cancer and his paper on the result of this propaganda. In the latter he describes how he issued in December, 1902, to every doctor in East Prussia, a pamphlet, urging them, among other things, to make an internal examination in all suspicious cases. To midwives he sent a leaflet pointing out the symptoms of uterine cancer, and urging them to send on to their doctors all patients who presented any such symptoms. In addition to this he published in the most popular lay newspapers, "A Word of Advice to Womankind," in which the significance of irregular hemorrhages, etc., was insisted upon. The test of the effect of his appeal he based upon two points, viz., (1) the time which elapsed between the patient's first knowledge of cancer symptoms and her seeking medical advice; (2) the time which elapsed from the moment advice was given to the date when it was acted upon. On both these points he found a very marked improvement. The percentage of cases suitable for operation as the result of this appeal had risen to 74 per cent in 1903, against 62 per cent in 1902. Similar efforts have been made in Germany also by Duehrssen. The Austrian Cancer Committee prepared and distributed to all medical practitioners in Austria a pamphlet, entitled "*Principiis obsta.*" No practical steps in this direction so far have been taken in England. This, in spite of the fact that Lewers in a preliminary note to his book on "Cancer of the Uterus" (1902) suggests that something of a practical nature might be done in the way of making women themselves familiar with the early symptoms of uterine cancer. In America active steps were first taken at the Meeting of the International Congress of Arts and Sciences, held in St. Louis, 1904. (The report of the Committee on Cancer of the Uterus appointed by the A. M. A., in the meantime, has appeared in the *Jour. A. M. A.* Dec. 8, 1906. The chairman of the Committee, Dr. John C. Clark recommended that a copy of this report be sent to every member of every county medical society in America.—Editor.) Nothing has been done so far in France. A great deal of activity has been shown quite recently in Switzerland in promoting the crusade against uterine cancer. Three leaflets, directed respec-

tively to physicians, midwives and the lay public have been issued by the obstetrical and gynecological society of that country. The leaflet addressed to the public was sent to all the daily newspapers of Switzerland, in some of which it was published. In Sweden a commission has been appointed to begin active work in this crusade. (To the knowledge of the Editor, similar steps have been taken in Belgium and pamphlets have already been issued in Italy.)

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

RELATION OF CHOREA WITH TUBERCULOSIS.—Toutain (*These de Paris*, 1906), found that lumbar puncture showed a lymphocytosis five times in the seven cases of chorea in which he examined the cerebro-spinal fluid. According to the author this find would indicate that the organism had been invaded by some intoxication or some infection. In a certain proportion of the cases this infection is rheumatism. In others there is found scarlet fever, measles, whooping cough or tuberculosis. In one observation the choreic syndrome was produced by tubercular granulations disseminated on the pia mater in the neighborhood of the motor zone. In other cases small granulations developed along the vessels in the neighborhood of the fissure of Rolando. Various hypotheses are offered in explanation by the author.

THE DIAGNOSIS OF LATE HEREDITARY SYPHILIS IN THE SCHOOLCHILD.—Saxe (*Arch. of Ped.* Dec., 1906), found only twelve cases in which hereditary syphilis could be diagnosed from the presumptive evidence of physical signs, among 2,500 New York school children examined. The children ranged from six to sixteen years and about equal numbers of boys and girls were studied. The heredo-syphilitic children ranged from six to fourteen years of age; five were boys and seven girls; all save one were deficient mentally; eight children showed Hutchinson's teeth; four showed the remains of syphilitic eye lesions and one showed an active keratitis. Three of twelve cases had hydrocephalic heads. All showed retarded physical development, and seven of the total number showed associated rickety changes in the bones. Nine showed scars about the mouth; all had enlarged glands; two had lesions of the nose. No throat lesions were found. Chorea was present in two cases. It would appear from this investigation that heredo-syphilis is not a very common affection in school children, though it must be looked for by the school examiner.

LOBAR PNEUMONIA AS A COMPLICATION OF DIPHTHERIA.—Rolleston (*Brit. Jour. of Chil. Dis.*, Dec. 1906), in a series of 1,000 cases of diphtheria, found lobar pneumonia in only seven cases (0.7 per cent.) He

says that the characteristics of lobar pneumonia as a complication of diphtheria may be summarized under the following four heads:

(1.) Lobar Pneumonia as a complication of diphtheria is a rare event.

(2.) It is not, like broncho-pneumonia, the special appanage of laryngeal cases.

(3.) It occurs only in children.

(4.) It resembles the primary lobar pneumonia of children in being atypical in the following respects: Absence of expectoration and of marked respiratory trouble, in an occasionally remittent or even intermittent pyrexia, in the frequent occurrence of lysis, in its relative benignity, and absence of any sequelæ except empyema.

A CLINICAL STUDY OF RELAPSES IN TYPHOID FEVER OF CHILDREN.—As the result of their study of a series of cases, Koplik and Heiman (*Arch. of Ped.*, Jan. 1907), reached the following conclusions:

Relapses in typhoid fever are more common in children than in adults—about 15 per cent. in the former. The mortality is exceedingly low. The usual duration of a relapse in a child is from one to two weeks. As a rule the temperature is continuously high between a rapid rise at the onset and a rapid fall to normal at the termination of the relapse. A constant symptom, in addition to the prolonged temperature elevation, is enlargement of the spleen; roseola is present in about 75 per cent., leukopenia in about 60 per cent., and mild abdominal symptoms in about 50 per cent. of relapses in children. Complications in these cases are mild and infrequent. For the prediction of a relapse no reliable signs are furnished by the character of the interpyrexial period nor by the course, duration and severity of the original attack. Persistent enlargement of the spleen after defervescence occurs in a fair proportion of relapse cases; and a relapse following a mild primary illness is not as likely to be repeated as one occurring after a severe original attack.

ACIDIFIED MILK IN INFANT FEEDING.—Morse and Bowditch (*Arch. of Ped.*, Dec. 1906), reached the following conclusions, as the result of an extended experimental and clinical study:

Buttermilk, buttermilk mixtures and milk mixtures acidified with lactic acid bacteria are safe foods for infants, whether well or ill. Infants can thrive and gain on them for considerable periods of time. The use of a routine buttermilk mixture, as has been the custom in the past, is not as rational as that of an acidified milk mixture modified to suit the individual case or of buttermilk modified by the addition of cream and milk sugar. The preparation of such acidified mixtures, while not difficult, is not very practicable for private work. These mixtures and buttermilk are almost always taken well. The results obtained from acidified milk mixtures in cases of malnutrition and chronic disorders of digestion are not materially different from those obtained from the use of other preparations of milk of the same percentages. They are, however, worthy of trial in cases of intractable disturbances of digestion, because some cases do much better on them than on other forms of modified milk. Practically the same, and in some instances better, results are obtained in these conditions with pasteurized buttermilk as with acidified milk mix-

tures. This fact suggests strongly that the good results which are obtained with buttermilk mixtures are due to their low fat content in combination with a large amount of proteid in an easily digestible form, and not to the acidity or to the action of the bacteria. Pasteurized buttermilk gives very good results when given as the first form of milk food after the initial periods of water and starchy diets in acute intestinal indigestion and infectious diarrhea. It is possible that unpasteurized buttermilk will give even better results because of the action of the lactic acid bacteria on the intestinal flora. Fat free milk acidified with pure cultures of lactic acid bacteria ought, however, to be safer and more reliable than commercial buttermilk.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

SOME RARE DISTURBANCES IN BASEDOW'S DISEASE.—Mosse (*Berl. klin. Woch.*, No. 1, 1907.)—This is an account of three rare complications found in Basedow's disease which can be considered as a part of its possible symptomatology. The first of these is the presence of right-sided Graefe sign with a right-ptosis. The second is the presence of marked Basedow symptoms with a thyroid gland that is not enlarged. Senator has called attention to the fact that the size of the gland and the severity of the symptoms have nothing to do with each other, or rather no necessary relation.

This brings up the question, though it is not mentioned specifically in this paper, that the enlargement of the thyroid gland may be, in part, only a secondary effect of the abnormal content of the thyroid secretion. That is, it is more the nature of this secretion than its quantity that establishes the abnormal condition. The third point mentioned is the presence of glycosuria in this disease. The author mentions two cases with this peculiarity and describes one case in detail. The urine in this case contained 0.4 per cent.

TUMOR OF THE SPINAL CORD LEADING TO DESTRUCTION OF THE LUMBAR REGION, HYDROCEPHALUS, DOUBLE OPTIC NEURITIS AND PAINLESS LABOR.—E. W. Taylor (*Boston Medical & Surg. J.*, No. 6, 1907.)—This is one of the most suggestive cases of cord tumor that has appeared recently. It is also abstracted in this department to illustrate a carefully reported clinical case. The summary of the case is as follows: In September a pregnant young woman was suddenly seized with radiating pains down both legs. The pain increased and walking became difficult on account of the pain. The urine was at first under control. Later the pain extended to the bladder and rectal regions, and in the latter part of December difficulty in micturition supervened, necessitating the occasional use of a catheter. Beginning mental disorder appeared at this time; pain extended into the back; beginning paralysis of the legs; stand-

ing alone impossible; urine passed with extreme difficulty; sensory disturbances in the legs developed; loss of power in the legs rapidly supervened together with loss of reflexes. Increase in mental confusion, disorientation as to time and place, extreme constipation and complete urinary incontinence. Thereafter, headache, much restlessness and discomfort, stiffness of the neck, and sensitiveness on moving the head; increasing headache, beginning optic neuritis going on later to complete blindness. In the beginning of January a painless labor, giving birth to a healthy child. Pricking sensation in the arms, but without paralysis. In February persistence of complete transverse lesion of the cord with no faradic response in the muscles of the legs. Very marked mental disturbance with final loss of the power of speech and increasing apathy. Death six months from the onset of the first pain. Post mortem: Extensive tumor of the spinal cord, destructive in the lumbar region, associated with internal hydrocephalus. The interesting point of this case is the occurrence of optic neuritis in spinal cord tumors. In tumors of the lower segments of the spinal cord optic neuritis is practically unknown, but in this case the tumor invaded the cervical cord. The optic neuritis was due to an internal hydrocephalus which was occasioned by a practical occlusion of the spinal canal by the tumor. This led to a blocking back of the cerebrospinal fluid, normally finding egress from the brain into the subdural spaces of the cord.

CRISES OF PETIT MAL WITH A PARAMNESIC AURA: ILLUSION OF FALSE MEMORY.—Seglas (*Rev. Neurologique*, Jan. 15, 1907.) An interesting account of a case in which the aura consisted of false memory. It is of importance to remember that this phenomenon may constitute an important phase of an epilepsy which for a long time escapes notice. The case in its epileptic feature is as follows: At certain moments, suddenly the patient is under the impression that he has been in the same surroundings before. As familiar as the surroundings seem to be and as well known the people and things, in this circumstance he is unable to reproduce them in the waking state. The attack itself, of which this is only the aura, is sufficiently typical of a petit mal to need no attention in this abstract. The point of interest in such cases is that for a time the aura itself can constitute the main part of the attack, or replace it entirely as the case may be. Before deciding upon the significance of this phenomenon it is well to seek for other indications of epilepsy, as for example the existence of minor seizures such as were present in this case.

A CONTRIBUTION TO THE KNOWLEDGE OF THE SO-CALLED MYOHYPOTONIA OR MYATONIA CONGENITA.—Bernhardt (*Neurologisches Centralbl.*, No. 1, 1907.)—Notices concerning this disease have appeared in this department from time to time. The last was a contribution from Spiller, who had an opportunity of studying the post mortem appearance of a case of this disease. He came to the conclusion that the primary change was in the muscle substance itself and that the central nervous system as such as not involved. The disease was first described by Oppenheim who called attention to the existence of a peculiar condition met with in infants and very young children, in whom the muscular

system presented a most marked degree of hypotonia together with absence of very minus reflexes. To this condition he gave the name of myatonia congenita. Bernhardt's analyses, the published cases so far appearing in the literature as well as the few post mortem studies, and advances the idea that this disease is nothing more than an infantile form of multiple neuritis. He describes three cases of his own in which the diagnosis of multiple neuritis was made. He shows that they differ only in minor details from the published cases of the myatonia congenita. Spiller's cases are open to the criticism that some of the symptoms found were not characteristic of the typical myatonia as described by Oppenheim. The position taken by the author is worthy of considerable attention because it offers a reasonable explanation of cases which in a class itself complicates, unnecessarily perhaps, the whole subject of peripheral pareses.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

A DISCUSSION ON AFFECTIONS OF THE LACHRYMAL PASSAGES.—OSBORNE (*Brit. Med. Jour.* Dec. 29, 1906) states that a simple obstruction of the lachrymal passages does not produce constant epiphora and that constant epiphora may exist where the lachrymal canals are perfectly normal.

Risley, considering the anatomic conditions giving rise to obstruction, says that when the cause of epiphora lies in the puncta or canaliculi gentle dilatation after cocainization is usually sufficient to effect a cure.

When the sac is inflamed, a preliminary slitting of the canaliculus, followed by the injection of cocain-adrenalin, will contract the swollen tissue so that fluids will pass into the nose without the necessity of probing the nasal duct. When fluids can be made to pass, the inflammation of the sac and nasal duct will rapidly subside without probing.

Purulent affections are treated with astringents after cleansing with a solution of peroxide of hydrogen; many are managed without probing.

When probing is necessary, the soft tissues are shrunk as much as possible and B. 3 or 4 is cautiously passed to the floor of the nose and left *in situ* twenty minutes. Attention is called to the necessity of treating the nose in the region of the turbinates.

Theobald advocates the use of his large probes.

Weeks deals with obstruction due to thickening of the lining membrane due to cicatrices. He uses gold styles, either solid or plated. The diameter of style should be about one mm. less than the diameter of probe passed. A temporary style of 3-4 American gauge lead wire is made to conform to the individual requirements. With this as a model a permanent style of 18K. gold wire is made by the surgeon. It should be removed every 3-7 days, and the passages irrigated. Complications and accidents are dragging the inner canthus downward, irri-

tation of the eyeball, displacement of style, concretions, absorption and perforation of the horizontal plate of upper maxilla, cutting through the wall of canaliculus by weight of style and formation of granulation tissue.

Results: Permanent recovery in from two to nine months. Recurrences are not common.

THE TREATMENT OF GONOCOCCIC CONJUNCTIVITIS WITH SPECIAL REFERENCE TO THE SILVER SALTS.—DE SCHWEINITZ (*Ther. Gazette*, January 15, 1907).—The most satisfactory irrigating fluid is boric acid. Potassium permanganate 1-2000 to 1-5000 by continuous irrigation after the method of Kalt, three or four times a day, is also useful. Cold, by chilled pads is recommended for adults in the early stages, provided the cornea is intact and the patient is robust. For the relief of chemosis, De Schweinitz advocates radial incisions with a Graefe knife through the entire depth of the swollen tissues. He believes in the superiority of silver nitrate in 2 per cent solution over organic silver salts. It must be painted on to the everted lids, after cleansing of pus, and the pellicle formed by the silver washed away by sodium chloride solution. After the lids are replaced, the sack is irrigated and iced compresses are applied for five or ten minutes.

Derby has proved that argyrol forms a precipitate in the presence of albumin and urine, and that its bactericidal power is exceedingly weak. Nevertheless, clinically, argyrol is of value in that it diffuses itself, penetrating all the crevices of the inflamed conjunctiva which it coats, thus floating pus and mucous to the surface, from which it can be readily removed by mild irrigation.

ON THE SECONDARY INSERTION OF THE RECTI MUSCLES AND THEIR CLINICAL IMPORTANCE.—HOWE (*Brit. Med. Jour.*, Dec. 29, 1906).—The supporting fibres of connective tissues passing from the muscles to the globe constitute the secondary insertions of the extraocular muscles. In common with many other muscles of the body, the ocular muscles have their insertions strengthened by tendinous bands. Max Virchow, in a vertical section of the globe near the insertion of the recti muscles has shown that these fibres extend from the edge of each muscle toward the adjacent muscles. These small fibres are, clinically, of great importance, as they must be divided in order that a tenotomy may be complete.

BINOCULAR VISION.—A. FREELAND FERGUS (*Brit. Med. Jour.*, Dec. 29, 1906), describes the use of plastograms, or stereoscopic pictures, the one printed in red and the other in green, in testing a patient's consciousness of perspective.

It is often difficult to ascertain whether a person really has a sense of the third dimension. All doubt on the matter can easily be dispelled by asking the patient to sway himself slowly from side to side while examining a plastogram. Anyone with fully developed binocular vision will find that the objects in the foreground appear to move in the same direction as he moves. As he closes one eye the apparent movement at once ceases, for the condition of its being present is that both eyes shall be used simultaneously.

LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OF

WILLIAM E. LAUER, M. D.

THROAT DISEASES CAUSED BY THE MISUSE OF THE VOICE.—VAN BAGGAN (*Med. Record*, Jan. 5, 1907).—The author states that the throat troubles of clergymen, orators, professional speakers and singers are nearly always due to a misuse of the voice. The principal symptoms of which the patient complains, are a dry and hot feeling in the pharynx and larynx, irritation, and a frequent cough, especially after speaking or singing. Examination shows a catarrhal condition of the pharynx and larynx with congested and swollen mucosa; the pillars of the fauces are swollen and often highly developed. There is usually a paresis of some of the laryngeal muscles, and always a paresis of the vocal cords which are red, or yellow in color, and which do not close well. Observing these patients while speaking, or singing, we shall see that they do not use their breathing, articulation and vocal muscles normally; the faulty breathing fails to support the vocal muscles sufficiently for the proper vibration of the vocal cords. According to the author the fault is purely functional, and the proper treatment of such cases is to teach the patient to breathe properly, the combined diaphragmatic and costal breathing being considered the best; and to have him learn to control his breath, and articulate properly. The speaker should be warned not to take singing lessons to improve his voice. No exercises are to be undertaken until the patient has gone through a judicious medical treatment united with rest to the organ.

THE RADICAL OPERATION FOR EMPYEMA OF THE ANTRUM OF HIGHMORE.—RETHI (*N. Y. Med. Jour.*, Feb. 9, 1907).—The technique of Rethi's operation is as follows: First of all he paints with a cocaine-adrenalin solution the lower concha inside and outside, and the external nasal wall of the lower and middle nasal meatus. The operation is nearly entirely painless, and it is seldom necessary to again use the cocaine during the operation. The lower concha is then loosened from its insertion in its outer two-thirds with one or two clippings of the scissors, and dissected in its inner one-third with a conchotome, or curved scissors. The external wall is opened with a chisel through pressure of the hand, and the edges of the opening so formed are to be made even on all sides, not only upwards but also downwards, that is toward the external wall of the lower as well as of the middle nasal meatus, so that a broad opening of communication is formed between the maxillary antrum and the nose. A sharp retroflected spoon is used immediately after opening and if a deeper inflammation is suspected, the walls are carefully examined and everything scraped that looks suspicious.

About a quarter of an hour is required for the entire proceeding, while the operation proper takes about five minutes. The antrum is washed out daily until the pus becomes less; then, less frequently.

The author has used this operation in 38 cases, with a cure of 32 cases, and attributes his success to the large opening which his operation gives, seldom, if ever, requiring a second operation.

SOME MENTAL SYMPTOMS DUE TO DISEASE OF NASAL ACCESSORY SINUSES.—STUCKY (*Lancet-Clinic*, Jan., 1907).—In support of the belief that a great many mental disturbances are due to acute or chronic disease of the accessory nasal sinuses, the author reports a number of cases of accessory sinus disease marked by depression bordering on insanity, that were cured and restored to a normal mental condition after undergoing an operation upon the sinuses which relieved the condition found there. The cases reported were all of the chronic suppurative variety, and practically the same operation (Killian) was performed in each case; always followed by a relief of the psychoses.

The presence of pus, or granulations in the sinuses is not necessary to produce marked toxic symptoms with pain and mental depression. In some of the cases reported, no pus was suspected and none found, but as soon as the obstructing middle turbinate was removed, the relief was immediate.

The etiology of the condition, according to the author and other authorities, depends on the anatomic relation of the middle turbinates to the hiatus semilunaris and infundibulum. The air in the frontal and anterior ethmoidal cells is imprisoned there by pressure of the middle turbinates against the lateral wall of the nose, the turgescient tissues filling in the hiatus and effectually blocking it. The lining membrane absorbs the oxygen from the air, creating a vacuum; negative pressure results and consequent swelling of the lining membrane with increased blood supply to this region. Stasis results and pressure of the congested tissues on the contained nerve-endings produces the symptoms, and results in reflex vaso-motor disturbances in the circulation of the neighboring tissues.

OPTIC NEURITIS IN THROMBOSIS OF THE CRANIAL SINUSES AND INTERNAL JUGULAR VEIN.—LANGWORTHY (*Laryngoscope*, Jan., 1907).—Reviewed twenty-six cases of thrombosis of the cranial sinuses and internal jugular vein. He found that in only 30 per cent of the cases was there an occurrence of optic neuritis; in nearly three-fourths of the cases the diagnosis had to be made without any demonstrable ocular changes. The finding of an optic neuritis in only 30 per cent of the cases was a matter of some surprise to the author, as many of the cases were extremely severe with a lethal termination. The author says that ordinary marked papillitis is followed by post neuritic atrophy; but in the optic neuritis met with in thrombosis of the lateral sinuses and internal jugular vein, the reverse seems to hold good. Almost without exception the neuritis subsides and the disc soon regains its normal appearance with excellent vision.

A case is reported of a boy eight years of age, who was admitted to the Massachusetts Charitable Eye and Ear Infirmary, November 5, 1904, with a right acute otitis media with mastoiditis plus extra-dural abscess. A few days later he developed thrombosis of the lateral sinus and internal jugular vein. Mastoid operation and ligation of internal jugular vein was performed. Examination of the fundi revealed a double optic neuritis with hemorrhages into the retina. A month later the

optic neuritis was seen to be rapidly diminishing. Hemorrhages remain, although less distinct.

Two years later the fundi were normal in appearance with good vision. No contraction of the visual fields. The author states that an optic neuritis should not be considered as present in these cases unless it is well marked. Hyperemia of the disc is not a neuritis. He concludes: 1. That the frequency of optic neuritis is low—about 30 per cent. 2. That even the most severe type of optic neuritis is not followed by post-neuritic atrophy, but rapidly subsides with preservation of good vision. 3. That cases in which the fundi are negative throughout the acute attack, remain so. 4. That for optic neuritis to be considered due to the disease, it must be well marked, and that optic neuritis when it does occur is a symptom of the highest importance.

MEDICAL LAW AND MEDICAL JURISPRUDENCE.

IN CHARGE OF

IRVIN V. BARTH, LL. B.

OPINIONS OF NON-PROFESSIONAL WITNESSES AS TO MENTAL CONDITION.—Wightman vs. Grand Lodge A. O. U. W. of Missouri (*St. Louis Court of Appeals*, Dec. 11, 1906), 98 S. W. 829:

In an action upon a benefit certificate the mental condition of him upon whose life the certificate was issued became a material issue. To prove his alleged insanity certain lay witnesses were permitted to testify and in sustaining the action of the trial court the St. Louis Court of Appeals held:

"These witnesses stated the facts upon which they based their opinions of Wightman's mental condition, and while their opinions may not be entitled to the same weight, and may possess less probative force than would the opinions of professional men on the facts related by the witnesses, yet their opinions were competent evidence to go to the jury for what they were worth."

NOTE: Since the case of *Baldwin vs. The State*, 12 Mo. 223, decided in 1848, the Courts of Missouri have held to the doctrine that opinions of non-professional witnesses as to mental condition are admissible in evidence. Here it has been held, however, that accompanying his opinion the witness must recite the facts upon which he bases his conclusion. "The value of such opinion depends wholly upon the opportunity the witness had to observe the conduct of the person whose mind is in question and upon the incidents actually observed. These circumstances should be stated, first, to make the opinion competent as evidence; and, second, to enable the jury to estimate the value of the opinion. Indeed, a non-professional witness may relate the facts without expressing any opinion at all, leaving it to the jury to draw the conclusion with or without the aid of experts."

But it must be noted also that in *State vs. Soper*, (1899) 148 Mo. 217, the Supreme Court of Missouri, departed from the doctrine which requires the lay witness to give the facts on which he founds his opinion concerning the mental condition of a person in a case wherein the witness gave expression to an opinion that the person observed was sane. "In that case," the Court held, "the subject of the testimony would not give manifestations of certain eccentricities which usually mark the conduct of mind diseased."

Though Missouri is in line with most of the States in admitting the testimony of non-professional witnesses, concerning sanity or insanity, there is much authority to the contrary. In New York the earlier decisions rejected such evidence entirely but there have been upheld since then certain refined distinctions so that at the present time in that State much is left to the discretion of the trial court in admitting or excluding that class of testimony. A recent writer in commenting upon the division of authority in this matter pertinently observed: "To a large extent the action of the tribunals of a given State is determined by their opinion as to the probative value of 'expert testimony,' properly so called. To Courts which regard expert testimony or scientific subjects as of exceptional value it is a controlling consideration that the subject of insanity is one of a technical nature, that the popular standard of insanity is not the same as the legal standard, and that special training is needed to appreciate the significance of the facts presented in evidence, while the inference of an observer is frequently colored by his prejudices. Courts whose opinion fails to recognize any special value in expert evidence generally naturally fail to recognize any in this connection. They are impressed with the circumstance that the facts in their entirety frequently elude statement, and that therefore the expert cannot have a complete and accurate basis for his judgment; that many witnesses can make a correct inference easier than they can make a detailed description, that as commonly presented to observation insanity is readily detected, if carried beyond a certain point and that to reject the inference of an observer with suitable opportunities and faculty for observation is to refuse to consider evidence which is frequently of the highest possible value."

And it is here interesting to observe the views of the Supreme Court of Missouri on this question of "expert testimony" expressed in the year 1898, in the case of *State vs. Soper*, *supra*:

"It belongs to the Court to give the law applicable to the jury, whether that bears on the science of medical jurisprudence or not. Therefore, the Court was entirely right in refusing to let counsel for defendant read as a part of their argument to the jury the writings of eminent physicians. The Court had it within its discretion to grant such permission; it could not be demanded as a matter of right. And in concluding this paragraph, I cannot refrain from saying, what many others in similar conditions have said, that Courts as the years go by, place a lessening reliance on the value of expert testimony in relation to the subject of insanity. Indeed, on this bench for a long period of years, we have had murder cases coming

up from the largest city of this State and wherever and whenever a distinguished expert and author on insanity was called on the witness stand, he invariably made out the defendant to be insane."

EXPERT TESTIMONY AS TO CAUSE OF DEATH FOUNDED SOLELY ON KNOWLEDGE DERIVED FROM STUDY.—Rice vs. State, (*Court of Criminal Appeals of Texas*, 1906), 94 S. W. 1024.—Appellant was convicted of murder in the first degree and his punishment assessed at a life imprisonment. The indictment charged him with the murder of his wife, the allegation as to the cause of death being the administration of strychnine from a fountain syringe into the rectum. Evidence was introduced by the State tending to support this allegation.

To sustain its case the State introduced two physicians to give their opinion as experts concerning the cause of death, both of whom attributed it to strychnine poison. In qualifying these witnesses, it developed that neither had ever before in the course of his practice seen a case of strychnine poison, though both were medical graduates and had practiced a number of years. Their knowledge concerning strychnine poison had been acquired solely from reading the books and study, and from what they had been taught in school. Objection was made that these witnesses could not be considered as experts and, consequently, their testimony was inadmissible.

The Court in passing upon this point said:

"The authorities on this subject appear to hold the rule thus:

'A witness may be competent to testify as an expert, although he has had no practical experience in the subject of inquiry, but had derived his knowledge and information solely from study and reading of books dealing with the subject under investigation.' Under the rule laid down by these authorities, the testimony was admissible.

* * * * * A man may become an expert from his knowledge of the human system and from his knowledge of strychnine as a poison, without having ever attended a case of poison by strychnine. A man may become an expert from scientific investigation without any practical experience."

NOTE: The doctrine of the principal case is in accord with the decided weight of authority. In every field of human activity where the testimony of an expert may be required he may be qualified as such either (1) by reason of a professional, scientific or technical training, or (2) by practical experience in the subject matter of his testimony, which gives to him an especial knowledge not shared in by men in general. Where a witness is shown to have both qualifications, his testimony, of course, is entitled to be given greater weight by the jury, but the absence of one of these does not as a matter of law render him incompetent to testify as an expert. In any event, the question of competency is for the trial judge to determine and in fixing the standard of qualification he is given by the law a large discretion, not arbitrary, of course, but founded upon sound reason depending in great part upon the nature of the subject matter as to which the testimony is offered.

The Supreme Court of the State of Missouri, in the case of *Helpenstein vs. Medart*, (1896) 136 Mo. 595, announced the doctrine of the principal case as applied to the testimony of a mechanical engineer when that Court quoted with approval the following:

"A witness, otherwise qualified, may express an opinion on a matter pertaining to his special calling or profession, although his knowledge of that particular matter has been derived from study rather than from actual experience. It is the doctrine of the Courts that study of a matter without practical experience in regard to it may qualify a witness as an expert."

Similarly, the case of *Fischer vs. Packing & Provision Co.*, (1898) 77 Mo. App. 108. And with reference to a medical expert the case of *State vs. White*, (1882) 76 Mo. 96.

Interesting questions, suggested by the principal case, have arisen in many jurisdictions concerning the testimony of experts after a chemical analysis of stomach contents for the purpose of discovering the presence of poison. It has been held that physicians may testify "to a chemical analysis made by them of the stomach of the deceased, and to the tests applied for detecting the existence of poison," though they were not professional chemists and had no experience in the analysis of poison. But such testimony, though competent, has not the weight of credibility as the testimony of an expert shown to be a practical chemist, whose conclusions are based not only upon study but upon experience as well. And it was further held in the case of *State vs. Cook*, 17 Kan., 392, that a person who is a chemist and toxicologist might testify as an expert concerning the effect of strychnine upon the human system, although he may not be a physician or surgeon.

SOCIETY PROCEEDINGS.

ST. LOUIS SURGICAL SOCIETY.

Meeting of December 8, 1906.

Dr. Arthur Tracy Cabot read a paper entitled "A Contribution to the Study of Hydronephrosis," for which see page 277.

DISCUSSION.

Dr. Mudd said no mention had been made of the differential diagnosis between hydronephrosis and certain other forms of tumor of the kidney. In this connection he mentioned a case in which the x-ray was a great factor in establishing the diagnosis. A malignant tumor was thought of very strongly. An x-ray picture showed the tumor extending practically to the median line, but the light penetrated the tumor very readily, making the diagnosis pretty clear between a solid tumor and hydronephrosis. He believed the x-ray would be an important factor in the differential diagnosis of these tumors.

Dr. Carson said that most of these cases when seen by the surgeon have nothing but the shell of the kidney remaining, and therefore he believed the best thing to do was to perform nephrectomy. He mentioned a case operated on by him which he did not believe could have been relieved by catheterization, if the obstruction had been simple-kinking of the ureter, for it would have recurred, even if it had been dilated. The ureter stood high up on the ventral surface; the pelvis came off from its lower border. The obstruction was due to a cicatrix which had formed in the ureter.

In regard to traumatic hydronephrosis he mentioned a case in which both kidneys were involved. At the post mortem, instead of finding a hydronephrosis he found a cyst around each kidney.

Dr. Cabot, in closing, said he had seen a good many cases which he felt sure were cases of hydronephrosis in which an operation did not seem warranted. These he treated by manipulation and posture, by raising the hips, thus assisting the pelvis of the kidney to overcome the condition temporarily, which afforded relief. He would not use this method of correcting the ureter by inserting a bougie in place of operating on a valve if a valve could be discovered, but in the cases reported he had been driven to the method because he was unable to locate any special point of obstruction. In cases where it is difficult to locate the point of obstruction, straightening the canal by the bougie may be of service. In the cases operated upon the attachment of the kidney to rib is an important part of the operation in order to insure the permanency of the result.

BOOK REVIEWS.

E. MERCK'S ANNUAL REPORTS. Complete Series. Vol. XIX., 1905. Darmstadt, May, 1906.

This useful report on the "advancements of pharmaceutical chemistry and therapeutics" offers in a convenient form the experience of a multitude of observers with the various preparations discussed. The form is in general that of an encyclopædia, the various drugs being arranged more or less in alphabetical order, with a brief discussion of the pharmaceuticals and therapeutics of each. The more recent German synthetic preparations receive the lion's share of space, but a few of the pharmacopœal drugs are also discussed, and not the least interesting portion is the discussion of recent advances in histologic staining methods. The little volume will be found useful to every internist.

AN INTRODUCTION TO PHARMACOGNOSY. By Smith Ely Jelliffe, Ph. D., M. D., Professor of Pharmacognosy, and Instructor in Materia Medica and Therapeutics in the Columbia University (College of Physicians and Surgeons), New York. Octavo volume of 256 pages, fully illustrated. Philadelphia and London: W. B. Saunders & Company. Cloth, \$2.50 net.

The special emphasis placed on the microscopic characteristic of drugs makes this book of inestimable value for those attempting to do original work in pharmacognosy. The fine description of the microscopical characteristics of drugs makes also an excellent aid in a practical study of pharmacognosy, which would be of great value to every pharmacist, as well as others interested in the scientific identification and structural anatomy of drugs. The source, the microscopic appearances, the chemistry, and the adulteration of each drug is also given—all of these important factors are essential to practical pharmacists, and of much interest to therapeutists.

ESSENTIALS OF MATERIA MEDICA. THERAPEUTICS AND PRESCRIPTION WRITING. By Henry Morris, M. D., College of Physicians, Philadelphia, Seventh Edition, thoroughly revised by W. A. Bastedo, Ph. G., M. D., Instructor in Materia Medica and Pharmacology at the Columbia University (College of Physicians and Surgeons) New York City, 12 mo, 300 pages. Philadelphia and London: W. B. Saunders & Company. Cloth, \$1.00 net.

This book is no exception to the high class of compends of the excellent series issued by W. B. Saunders & Company. It should fulfill the demand for an up-to-date synopsis on Materia Medica, Therapeutics and Prescription Writing of the present day. Dr. Bastedo has included in this work the newer remedies, their indication and therapeutic uses.

ORGANO-THERAPY, OR TREATMENT BY MEANS OF PREPARATIONS OF VARIOUS ORGANS. By H. Battui Shaw, M. D., Lecturer in Therapeutics, University College, London, Assistant Physician to University College Hospital and to the Hospital for Consumption and Diseases of the Chest, Brompton, 12mo., 250 pages. W. T. Keener & Co., Chicago. Price, \$1.75 net.

This scientific volume based upon research work of past years covers the entire field of organo therapy. The actual worth of the book is evidenced by the exact application of the facts of physiology, physico-chemistry and histology, which it accepts as a basis. It serves a very important purpose of summarizing the complete work of the past in this line, and it endeavors to establish a scientific basis, and the indications for this form of therapy.

A TEXT BOOK OF MECHANO-THERAPY. By Alex. Grafstrom, B. SC., M. D. Late Lieutenant in the Royal Swedish Army, Late House Physician of City Hospital, New York, Attending Physician to the Gustavus Adolphus Orphanage, Jamestown, N. Y., 12mo., 190 pages. Philadelphia and London: W. B. Saunders & Company.

This work is prepared especially for medical students, trained nurses, and medical gymnasts, and can be recommended as a text book or a guide to those who wish to make this therapy a specialty.

PRACTICE OF MEDICINE. By Hughes Dayton, M. D., Principal to the class in Medicine, New York Hospital, Out-Patient Department, Clinical Assistant in Medicine, Vanderbilt Clinic, College of Physicians and Surgeons, Columbia University. Edited by Victor Cox Peterson, A. M., M. D., Instructor in Surgery and Anaesthetist and Instructor in Anaesthesia at the New York Polyclinic Medical School and Hospital; Genito-Urinary Surgeon to the Out-Patient Departments of the New York and the Hudson Street Hospitals. 12mo. 316 pages. Philadelphia and New York: Lea Brothers & Company.

As a hasty reference for the busy practitioner as well as the student this volume bears out the previous excellent reputation of the medical epitome series of which it is a part. The addition in the inclusion of the chapter on immunity of the rare infectious diseases is not treated in the older text book and brings this compend up-to-date.

ATLAS AND TEXT BOOK OF HUMAN ANATOMY. Volume II. By Professor J. Sobotta, of Wurzburg. Edited, with additions, by J. Playfair McMurrich, A. M., Ph. D., Professor of Anatomy at the University of Michigan, Ann Arbor. Quarto volume of 194 pages, containing 214 illustrations, mostly all in colors. Philadelphia and London: W. B. Saunders Company, 1906. Cloth, \$6.00 net; half morocco, \$7.00 net.

This volume is a direct continuation of the first. It equals the first in the beauty of its illustrations and the accuracy and detail which is evidenced throughout. It treats of the viscera and of the heart. The mode of reproduction of dissections is identical with that employed in the first volume. K. Hajek has produced all the illustrations except two. They are multi-colored lithographs, with explanatory figures, and diagrams explaining the plates. Neither effort nor expense has been spared to insure the greatest excellence of the illustrations.

PLASTER OF PARIS AND HOW TO USE IT. By Martin W. Ware, M. D., Adjunct Attending Surgeon, Mount Sinai Hospital; Surgeon to the Good Samaritan Dispensary; Instructor in Surgery, N. Y. Post Graduate Medical School. 12mo.; 72 Illustrations, about 100 pages. Surgery Publishing Co., 92 William St., New York City. Cloth \$1.00.

The general demand for information and instruction on the question of the making and application of plaster of Paris bandages is great enough to require the publication of such a book as this. The author describes in explicit detail the many uses to which plaster of Paris is adaptable in surgery. He also takes up its uses in dental surgery. The book makes a very attractive little volume, and contains definite, useful information.

THE TOXINS AND VENOMS AND THEIR ANTIBODIES. By Em. Pozzi-Escot. Authorized Translation by Alfred I. Cohn, 12mo., vii. + 101 pp. New York, John Wiley & Sons, 1906.

A brief and very interesting presentation of modern views concerning toxins and antitoxins. The first half of the book is devoted to general considerations and the-

ories, the second to a more detailed description of animal, vegetable and microbial toxins. The concluding chapter on the venoms is one of the most interesting. The translation is smooth and adequate, but the proof-reading is open to improvement. An index would add to the value of the book.

PHYSICAL CHEMISTRY IN THE SERVICE OF MEDICINE. Seven Addresses by Dr. Wolfgang Pauli. Authorized Translation by Martin H. Fischer. 12mo.; pp. ix. + 156. New York, John Wiley & Sons, 1907.

A knowledge of physical chemistry is becoming more and more essential to all who wish to keep abreast of the new physiology and the finer methods of laboratory diagnosis. As yet, such knowledge is woefully lacking among nearly all but a few advanced workers in this field; many attempts at original research serve but to reveal the writer's ignorance of fundamentals. Dr. Pauli of Vienna in this little volume has presented clearly and concisely those aspects of physical chemistry that particularly concern medicine. The chapters on the colloidal state and the electrical charge of protein are of especial interest. This volume, too, suffers from the lack of an index.

CARBONIC ACID IN MEDICINE. By Achilles Rose, M. D. Large, 12mo, cloth, 268 pages, price \$1.00 net. Funk & Wagnalls Company, New York.

Although carbonic acid has been recognized for centuries as a therapeutic agent, it has fallen into disuse. Achilles Rose in this entertaining volume demonstrates the worth of this therapeutical agent and illustrates from personal experience and clinical records its healing qualities and many indications.

PRACTICAL MASSAGE IN TWENTY LESSONS. By Hartvig Nissen, Instructor and Lecturer in Massage and Gymnastics at Harvard University Summer School. Director of Physical Training, Brooklyn Public Schools. Author of Swedish Movement and Massage Treatment, A. B. C. of Swedish Education, Gymnastics, Rational Home Gymnastics, etc. 46 Original Illustrations, 168 pages, 12mo. Price, extra cloth, \$1.00 net. F. A. Davis Company, publishers; 1914-16 Cherry St., Philadelphia.

This very practical treatise on massage offers to the profession concise and reliable information regarding this very important and misused therapy. The practical illustrations of all methods, the definite and exact indications as well as the positive counter-indications presented in his little work should be of great value to every medical man.

PRACTICAL DIETETICS WITH REFERENCE TO DIET AND DISEASE. By Alida Frances Pattee, Special Lecturer at Bellevue, Mount Sinai, Hahnemann, and the Flower Hospital Training Schools for Nurses, New York City. Fourth Edition, 12mo., 311 pages. A. E. Pattee, New York.

This very exhaustive work, besides giving the author's own practical message in the preparation, application and indications of diet, includes the best thought from all other authorities in this most important means of therapeutics. The concise and exact information make it an excellent reference, and it is a book of inestimable value to physicians, nurses, and hospitals.

DOSE BOOK AND MANUAL OF PRESCRIPTION WRITING. By E. G. Thornton, M. D., Ph. G., Assistant Professor Materia Medica, Jefferson Medical College of Philadelphia. Third edition revised and enlarged, 12mo., 392 pages. Philadelphia and London: W. B. Saunders & Company.

This book is a very convenient ready reference for both pharmacists and physicians.

PULMONARY TUBERCULOSIS: ITS MODERN AND SPECIALIZED TREATMENT. By Albert Philip Francine, A. M. Harv. M. D. U. of P. of the Staff of the Henry Phipps Institute, Philadelphia, Examining Physician to the White Haven Sanatorium, Instructor in Medicine and Physician to the Medical Dispensary of the University of Pennsylvania. 12mo., 247 pages. J. B. Lippincott Company, Philadelphia.

This very interesting work is one of the most up-to-date treatises on this subject extant at the present time. It gives a complete treatment of tuberculosis, with detailed application of all the modern methods. It includes a brief account of methods of study and treatment of tuberculosis at Phipps Institute.

RATIONAL ORGANO-THERAPY. By Prof. Dr. a. von Poehl, Prof. Dr. Prince J. von Tarchanoff, Dr. Alf. von Poehl, Dr. P. Wachs. Translated by Dr. Carl Schulin, Billings, Mont. Octavo Volume of 230 pages. Philadelphia: P. Blakiston's Son & Company, 1012 Walnut street.

Based upon scientific research, the authors of this work lay special stress upon the action of the active principles isolated from organs as suggested by Prof. von Poehl. They bring forth by means of clinical demonstration a great variety of new indications, especially for spermin, and show its far reaching effect on those disease processes upon which this former therapy had not been tried in the past.

A PRACTICAL TREATISE OF MATERIA MEDICA AND THERAPEUTICS WITH ESPECIAL REFERENCE TO THE CLINICAL APPLICATION OF DRUGS. By John V. Shoemaker, M. D., LL. D., Professor of Materia Medica, Therapeutics and Clinical Medicine, and Clinical Professor of Diseases of the Skin in the Medico-Chirurgical College of Philadelphia Physician to the Medico-Chirurgical Hospital, Fellow of the Medical Society of London, etc., Sixth edition. Thoroughly revised. Octavo volume, 1255 pages. F. A. Davis Company, Philadelphia,

This revised edition of Shoemaker's *Materia Medica and Therapeutics* requires no special recommendation. The previous editions have been perfected, thus making the present edition a standard text book of this country.

TEXT BOOK OF PHYSIOLOGY NORMAL AND PATHOLOGICAL. By Winfield S. Hall, Ph. D., M. D. (Leipzig), Professor of Physiology, Northwestern University Medical School, Chicago, Member of the American Physiological Society, Chairman of the Section of Pathology and Physiology, American Medical Association, 1904-5, Fellow of the American Academy of Medicine, Member of the American Association for the Advancement of Science, etc. Second edition revised and enlarged, illustrated with 340 engravings, three colored plates. Octavo volume, 772 pages. Lea Bros. & Company, Philadelphia and New York.

The revision of this standard text has made it more practical and useful to the student, the physician and the investigator by the addition to each chapter of the *Pathological Physiology* concerned with that system. This addition of the practical application of physiology enhances the value exceedingly both as a text and reference.

INDIKATIONEN UND KONTRAINDIKATIONEN DES HOCHGEBIRGES. Von Dr. F. Jessen, Wurzbürger Abhandlungen, Vol. VI., No. 12. Wurzburg, A. Stuber's Verlag (Curt Kabitzsch), 1906.

The writer attempts to show the utility of high altitudes in a multitude of affections. The anemias and the various tuberculous disorders are especially benefited.

On the other hand, leucemia and most rheumatic disorders are often injured. As regards cardiac disease, while a high altitude is often injurious, selected cases do very well.

OPERATIVE SURGERY. By Joseph D. Bryant, M. D., Professor of the Principles and Practice of Surgery, Operative and Clinical Surgery, University and Bellevue Hospital Medical College; Visiting Surgeon to Bellevue and St. Vincent's Hospitals; Consulting Surgeon to the Hospital for Ruptured and Crippled, Woman's Hospital, and Manhattan State Hospital for the Insane. etc. In two 8vo volumes. 1302 pages. 1576 illustrations, 90 of which are in color. Sold by subscription. Price, cloth, \$10.00. D. Appleton & Co., 436 Fifth Avenue, New York.

This representative American work is probably the largest of its kind in existence. There are quite a number of one-volume works on operative surgery in English and German, while the French literature possesses a two-volume work of about two-thirds the size of Bryant's. We can be proud of this third edition, since it can be truthfully affirmed that quality has kept pace with quantity and the two volumes as now presented mark the epoch. The entire work has been revised and rewritten since it became so large as to necessitate a division into two volumes. The number of illustrations have been continually increased as the work has grown in size, until now 1793 of them are presented. Many of them are excellent, although it cannot be claimed that all of them represent the highest achievement of the engraver's art. One point, which the reviewer must criticize, is the author's habit of giving a page now and then to the illustration of the various instruments which are useful in this or that surgical procedure. This seems wholly unnecessary, and indeed involves repetition in most instances. It must be said that an excellent editorial supervision has been exercised in most instances where a choice of useful procedures, rather than all of which have been proposed on a certain subject, are given for the reader's edification. Now and then points of clinical value are added to the pure technical description of this or that operation. In the first volume one finds general considerations regarding anaesthesia, asepsis, etc., while the treatment of the various tissues as such is also considered. In volume two, as might be expected, special organs and regions are treated. Withal, the work is probably the best thing of its kind extant.

SURGERY, ITS PRINCIPLES AND PRACTICE. By Various Authors. Edited by W. Williams Keen, M. D., LL. D., Philadelphia and London. W. B. Saunders Company. 1906.

Herewith is presented the first volume of what is intended to be the most extensive work on surgery that has ever appeared in the English language. Nor is its extent all that it will have to recommend it. Each chapter will be edited by an eminent authority.

Such names as Bevan, Binnie, Codman, Crile, Cushing, Finney, Frazier, Kocher, Lennander, Matas, Mayo, Mumford, Murphy, Ochsner, Robson and a host of others equally as well known being embraced among the contributors to it.

The first of the five volumes has just appeared and leaves little to be desired with regard to style, illustration and general quality. It commences with the history of surgery and reviews the various subjects which can be treated generally.

It is not Dr. Keen's intention in this, or any other succeeding volume, to present what he terms "surgical novelties." The editors do, however, hope to give the reader the very latest knowledge which is of proven worth.

The other four volumes are apparently ready, as Dr. Keen states that they will appear as soon as they can be printed. The value of such a work cannot be questioned. In most of our smaller volumes on surgery, one man, together with his associates and assistants, is responsible for the whole volume; here, however, every chapter being written by an author of recognized ability in his own especial line of work, the quality of the book must be high. The galaxy of

authors here represented can certainly not be equaled by any other selection made in America.

SURGICAL DIAGNOSIS. A manual for students and practitioners, by Albert A. Berg, M. D. Lea Bros. & Company, New York and Philadelphia, 1905.

This volume, of a kind which is most needful to every surgeon, is possessed of 236 illustrations, of which many are original and others carefully chosen from the best works on surgery. There has been a general complaint that surgical diagnosis is poorly represented in our medical libraries. In fact, more volumes have been published upon all of the other branches of surgical science than upon this one.

The work before us is comparatively of small size, its pages numbering 543, but within its scope it embraces practically everything which the beginning surgeon will find necessary. The author comments upon the fact that improved surgical technique has brought the internal organs within the operator's field of work, consequently improvements in diagnosis were necessitated thereby. He gives due credit to explorative operations in general, but recognizes the fact that it is far more agreeable to the patient, where a diagnosis is possible without such a procedure. The diagnosis of disturbances in kidney functions receives due consideration and practically all of the newer surgical fields are fully considered. X-ray plates elucidate many traumatic lesions.

INTERSTATE MEDICAL JOURNAL

PUBLISHED ON THE FIRST DAY OF EVERY MONTH BY THE
INTERSTATE MEDICAL JOURNAL COMPANY

SUBSCRIPTION, \$2.00.

FOREIGN SUBSCRIPTION, \$2.50.

SINGLE COPY, 25c

Subscriptions may begin at any time. Volumes end with issues of December.

Original Articles.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. French and German articles will be received and translated free of charge, if found desirable for publication.

Reprints (200) of original articles will be furnished gratis to authors making the request, which must accompany the manuscript. Covers to these, and extra reprints, will be furnished at net cost.

Illustrations, such as plates, half-tones and zinc etchings, as in the judgment of the editors are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

Rejected Manuscripts will be returned, if stamps be sent for this purpose.

Advertisements.—Advertising forms go to press on the 5th of the month, the JOURNAL being mailed on the 15th. Time should be allowed for composition of advertisements and

for the sending and return of proofs. Advertising rates will be sent on application.

Change of Address.—In ordering a change of address, it is important that both the old and new addresses be given.

Discontinuances.—The INTERSTATE MEDICAL JOURNAL is not discontinued at expiration of subscription, but is sent until an explicit order to stop is received or a notice sent by us. A large majority of our subscribers prefer not to have subscriptions interrupted and files broken in case they fail to remit before expiration. It is therefore assumed, unless notice to discontinue is received and the amount of back subscription paid to date, that the subscriber wishes no interruption in his series. Journals returned are not notice of discontinuance.

Remittances should be made by check, draft, registered letter, money or express order. Address all communications to INTERSTATE MEDICAL JOURNAL, Linmar Building, St. Louis, Mo

INTERSTATE MEDICAL JOURNAL.

VOL. XIV.

APRIL, 1907.

No. 4

EDITORIAL.

THE QUESTION OF A STATE LAW FOR THE REGISTRATION OF NURSES.

In a most interesting little pamphlet, we note that there is much agitation in Pennsylvania over an act now pending in the legislature which will, if passed, require the registration of professional nurses. This pamphlet, which is our source of information, has appeared under the auspices of the Interstate Committee on Nursing, which committee has for its object "the regulation and advancement of nursing, the spreading of correct information regarding the duties and limitations of the nurse, and the proper relations of the nurse to the medical profession and to the community."

The pamphlet contains the names of more than seventy physicians who apparently subscribe to its contents, which, in no uncertain language, consists of an onslaught upon the trained nurse, and makes a violent appeal against the passage of the law for the registration of nurses, on the ground that it is not only unnecessary, but positively harmful.

It seems that the title "trained nurse" is one that admits of great latitude, so much so that the class of individuals calling themselves trained nurses may be said to be made up of women ranging from the intelligent, well-educated woman, with much hospital experience, down to the ignorant, self-complacent individual, who has had years of experience, but no definite training. Some of our professional brethren in Pennsylvania seem to regard the trained nurse as an entity, losing sight of this range of personality and acquirements, which in itself presents the chief consideration in the passage of such a law. We do not claim that all intelligent, well-educated and well-trained women are *good* women, but we are aware of the fact, on the other hand, that all ignorant women are not good women. It is a fallacy to suppose that, because certain educated nurses are overbearing and require too much waiting upon, these faults result from their training. It is equally fallacious to reason that, because a woman is ignorant and unofficial in the open, she is a good nurse and will obey the physician's orders when left to herself with the patient.

Undoubtedly, since the systematized training of women to become nurses began, the care of the sick and injured has been improved by myriads of details, of which the masculine mind is as a rule incapable, and of which the untrained female mind does not see the need. The great blunders and mistakes that arise in the treatment of the sick and injured, usually have their source in carelessness on the physician's part or ignorance on the part of the nurse, or a combination of these faults. For argument's sake, let it be assumed that the ideals of the properly trained nurse are high ideals; also that the ideals of the ignorant so-called trained nurse may be high, but that the chances are that she has nothing to fall back upon but her womanly interest in nursing, which is one of the most fruitful sources of serious mistakes and insubordination on her part. Assuming as a matter of course the truth in the idea that education and training are our chief resources against vicious carelessness and ignorance, it seems clear that the woman who has honestly gone into nursing from the outset with the intention of fitting herself for this calling and attaining as much knowledge and proficiency as possible, has a good case when she asks of the State that she be protected from those who masquerade as nurses and bring the work of the nurse so often into disrepute by their lack of cultivation as women, and their absolute ignorance of the objects of medicine.

Culture, refinement, education and definite professional training are the qualities that should be demanded of a professional nurse if she is to have a fixed place in the community. The first step towards this end is the registration by the State of those who are capable and the exclusion of those who are unfit. So energetic a demand as that contained in the pamphlet issued against the passage of the Act for Registration of Nurses in Pennsylvania seems far beneath the dignity of any fair-minded person, and much further than this, beneath the dignity of a physician whose aim should be toward the betterment of medical conditions in the community. If any physician or surgeon has repeatedly had the sad experience with nurses which are set forth in the pamphlet; if in his contact with professional nurses, especially where they have been of good hospital training, he has again and again found them overbearing and critical, let him take an honest, unprejudiced look at himself and his methods, and compare them with the standard set by any modern hospital for its medical staff. Perhaps he will discover something.

The trained professional nurse is an absolute necessity to the modern physician, and incidentally to the modern patient. The better her training and the better her general education, the surer will be the chance of her being a good woman and a good nurse. As a class trained nurses should set up requirements and be very careful whom they admit into their sisterhood, and the State should see to it that they are protected.

The statement of Mrs. Fenwick in the *Outlook*, January 6, 1906, has acted as a violent stimulus to the writers and signers of the Pennsylvania pamphlet. In this our brethren make a serious mistake, as they seem to consider it a representative statement, whereas in all probability it is only the statement of a much-biased and enthusiastic woman.

Concerning insubordination on the part of nurses, any clear-sighted physician need only ask himself once (if he greatly values his medicines) to be convinced as to which sort of nurse, in all human probability, would be the more likely to cast his concoctions out of the window. Would it be the educated, refined woman, who understands rational therapeutics, or would it be the old Betsy Prig or Sairy Gamp, who has long administered catnip tea and done obstetrics on her own responsibility?

The regulation and control of nurses by State law is a great step in the advancement of medicine. For a time the passage of such a law might be followed by unpleasant conditions, due to individual misconception, but the end-result would certainly mean a purification of the nursing ranks similar to that produced on medicine in general by the legal demand for the registration of medical practitioners.

AMERICAN PHYSICIANS AND THE DISTORTION OF TRUTH.

The spirit of picturesque untruth is in the air. Again our sober and strenuous ideals of life are disturbed. A new equation of values has been thrust upon us to perturb our spirits, to excite us into righteous indignation because our heretofore unshakable faith in the good possibilities of human nature has been rudely jarred.

We are a patient people, we of the medical profession, and do not generally cavil at things, be they quite important, unless envy and hatred are responsible for foolish and silly personalities. But when nice young men, who had "to toil onward, pricked with goads and stings" at their respective medical schools, come back from Europe and vaingloriously boast of their achievements in foreign lands, we really feel like very poor critics for not having recognized at once (that is before they sailed away) their transcendental mental gifts. That some of them profit by their European sojourn is evident to the unbiased, but that European professors immediately recognize their worth, and with extraordinary graciousness brush others aside to greet them, to propitiate them, aye, to adopt them, seems to us a delusion peculiar to inexperienced youth recently recovered from a plunge into cosmopolitan waters.

Cheek-by-jowl friendships obtain among equals, occasionally, but even our splendid complaisance will not allow us to entertain the idea that our rather raw material, with its lack of a fair knowledge of languages, its gaucheries born of a hampered and cramped early intellectual-life,

is carried triumphantly through the clinics of Berlin and Vienna by Professors whose learning is indubitable, but whose manners belong to a category where, as yet, there is no differentiation between the niceties and vulgarities of the table, or conversational subtleties and insolences, things that make for refinement, graciousness and bonhomie. And yet we are compelled to listen to long spaces of dreariness whenever a number of newly arrived and newly advertised doctors see fit to exploit their egomaniac European experiences.

Theirs is not a step towards a higher plane of knowledge as would be evidenced in a highly prized contribution to a medical publication, but a fulsome account of "my successes with certain professors." Science stands abashed at this; and Time hangs his head to think of the sheer waste of all the precious moments of youth, moments that should be dedicated to better things than vain-glory and self-conceit. But unfortunately all this is not realized by these advocates of the last refinements on self-praise. Months, sometimes years, pass before the asininity of their attitude is brought home to them. Only when "my dear Professor from Vienna or Berlin" happens along and cold-shoulders them, do they feel what insignificant entities they are in the Professor's cosmos.

Thackeray says in one of his books that a good Briton is never so pleased and elated as when he is fortunate enough to walk down Pall Mall, sandwiched between two dukes. The same might be said about our sprightly doctors, who are still suffering from a veneer of their idea of European culture derived from contact with one or another "dear Professor", were they ever fortunate enough to hold converse and parade proudly between two real German professors on our streets. But German professors are far less gracious than Thackeray's dukes, and he of American birth and three months' European culture, can count himself fortunate if a slight nod is accorded him when "my dear Finger or my dear Von Bergmann" is on a visit to this country. For it is patent to all that these men carry with them an aura of academic greatness which they think should place them beyond the pale of mere American practitioners who once upon a time spent two or three months in their clinics.

Our dissidence with the recently returned American physician would not have the insurmountable barrier it has at present were he to tell the truth in plain, unvarnished terms. Let him confess his successes, his failures, his achievements, his struggles. But at the same time, let him cease his bombast, his blatancy, for its futility is of the sort that happens when one dry stick is rubbed upon another in the hope of generating a flame.

THE CITY HOSPITAL, AGAIN.

A new superintendent is about to be appointed to the City Hospital. The candidates are even now vigorously seeking to strengthen their special claims for preferment among those that have the appointive power, or their friends are doing it for them. Much discussion fills the medical world in St. Louis as to this one's strength or that one's weakness. Again we hear the old question of staff versus individual medical management. The law and charter are again invoked to test either possibility. It is a wearisome question to those who have passed through episodes of this kind many times before. There is no longer an argument to support the antiquated system in vogue here for so many years. The organized medical opinion in St. Louis, irrespective of school or practices, has taken its stand in favor of the staff hospital. A staff organization is the first necessity for a good hospital. What has proven the best in the more advanced medical communities is not too good for the one here. To oppose this is to be traitor to what is potentially the best in medicine in this city. To place obstacles in the way of its accomplishment is but to place greed and selfishness above the common good. If the staff hospital is the best hospital, and if the present conditions permit it to be worked out, then a continuation of the old system is the fault of whoever is finally chosen superintendent. There is no dispute concerning either of these propositions and there should be no doubt upon whose shoulders the blame should rest if the staff hospital should not be developed. The question is now fairly placed. The new superintendent should be made to see this. He should be forced to its realization by the power of medical opinion, expressed or unexpressed, as the case may be. There is no physician strong enough to ignore the force of the opinion so universally advanced. The charter amendments or the charter revision, by which a staff hospital is to be made compulsory by law, is a thing of the nebulous future. It is the excuse of the timid, the selfish and the surgically ambitious who sees in the City Hospital an instrument for his own advancement. We in St. Louis have become too significant a medical community at this time to permit a hospital of the importance of the city hospital to be made the personal machine of one whose sole desire is to make his hand more cunning in surgical technique and thus to obtain surgical material after he is through. The city hospital exists to take adequate care of the sick poor first, and then to advance the knowledge of medicine by teaching, training and investigation. These high purposes are not to be intrusted in the hands of one man for the simple reason that no one man is large enough to accomplish a tithe of these requirements. The organized medical opinion in St. Louis, without regard to school or practice, has put the seal of its high power upon the idea of a staff hospital. The new superintendent, whoever he may be, must take cognizance of this

opinion, or he shall prove the truth of the strictures contained in the foregoing criticism. He may in the fancied security of his position ignore the work that has been done by the more earnest physicians in the joint medical council, or he may make a serious attempt to develop a staff organization. In the one case he places himself in the position of degrading still further an institution that means more than any one thing the measure of the medical standard of this city. In the other case he will obtain the lasting gratitude of the medical profession. It is a pitiful thing that one man should have the power in either the one or the other instance. It is pitiful for him and for us. The new superintendent must face this proposition. The vital thing is what choice will he make. Upon his choice much will depend. It is to be hoped that he will see the seriousness of his position and will act in accordance with it.

SHAKESPEARE IN MEDICINE.

Simultaneously some of our medical journals are publishing the perennial twaddle known to the world for many years by such time-honored variants as the *Medical Knowledge of Shakespeare*, *Some Characteristics of the Medicine in Shakespeare*, and the *Medical and Surgical Knowledge of Shakespeare*.

The *Boston Medical and Surgical Journal*, Jan. 17. 24., (Dr. Albert C. Getchell), the *Bulletin of the Johns Hopkins Hospital*, January (Arthur W. Meyer, Instructor in Anatomy at the Johns Hopkins University), and the *Dietetic and Hygienic Gazette*, January and February (Dr. John W. Wainwright), are the chief offenders against a revival of a weariness that we had thought long dead. But, it seems, we builded "less" better than we knew, and must bear the consequences of a childish belief in the non-recurrence of incubi, literary vampires and nightmares.

Just what purpose medical journals serve by publishing a rechauffe of old subjects is not clear to us, but aside from a feeling of collusion that bores us to exasperation we feel that the small glory achieved by the several authors is a minor matter compared to the unpardonable injury done to a writer of the very first rank. Tolstoi's attack on Shakespeare recently printed in the *Contemporary Review* (London), was brought on by the indiscriminate praise of indelicate critics and reviewers. And in the same way we would practice the delightful arts of silence were our tempers unruffled by a cessation of Shakespeare's knowledge of medicine, which knowledge to-day is of no practical use, and having once upon a time been exploited by unwary critics, should be allowed a decent and undisturbed interment. But medical journals must think otherwise, hence the Shakespeare-as-doctor output, and the gratification on the part of certain writers for our medical press that burrow-

ing in the graves of dead subjects is of value, to themselves and of especial interest to the medical public.

We do not mean here to dwell at any great length upon the new (?) interpretations of the master's words by these, the latest commentators. Suffice it to give a few quotations illustrative of the utter lack of humor of these pundits. For instance, Arthur W. Meyer, in *Some Characteristics of the Medicine in Shakespeare* says: "In the sixteenth century to bleed meant also to purge. These were usually the initial procedures in case of fever, and of many other affections. Macbeth, in speaking to the Scotch physician, bids him

* * * * * 'Cast
The water of my land, find her disease
And purge it to a sound and pristine health,
Pull't off I say.
What rhubarb, senna, or what purgative drug,
Would scour these English hence?"

—Macbeth, V, 3. "

and Albert C. Getchell in the *Medical Knowledge of Shakespeare* adds his quota to our fund of unconscious humor by writing:

"Malvolio refers to the anatomical fact of the return of the blood from the extremities along the surface through the veins, when he says:

"*Malvolio*. Sad, lady? I could be sad. This does make some obstruction in the blood, this cross-gartering."—(*Twelfth Night*, III., 4. 20.)' "

We regret we cannot grant them some balm in Gilead despite our severe strictures, but this we cannot do, for if any balm is to be mixed with our criticisms, it must go to him of German birth and addled brains, Herr Franz von Winckel, of Munich, who surely needs our comfort and sympathy for publishing "*Shakespeare's Gynaekologie*" in *Sammlung Klinischer Vortraege*. Herr Franz von Winckel regards the dramatist a gynæcologist par excellence, though the excerpts from his article which have come to us, would not lead the veriest tyro into his way of thinking. Falstaff and Schenck are bracketed; a water-drinker will be the progenitor of "wenches" is mentioned; the effects of fright in the mother upon the health of the unborn is not overlooked, and the longings during pregnancy receive due notice. All this, according to our German confrere, proves conclusively that Shakespeare was a gynæcologist the specialists of modern times ought to envy. No doubt, encouraged by this recent attempt to class the dramatist among the first gynæcologists of any age, others will rush into print, and before the year is much older we shouldn't be surprised to be approached by ubiquitous agents who will insist that no modern physician's library is complete without Shakespeare's *System of Surgery*, Shakespeare's *Manual of Skin Dis-*

eases, Shakespeare's Short Study of Orthopedics and Shakespeare's *Materia Medica*.

MOEBIUS AND THE INTELLECTUALITY OF WOMAN.

The recent demise of the famous psychiatrist, Paul Julius Moebius, has called forth many expressions of praise from men in the same specialty, but in all the encomiums showered upon him, scant, if any, mention was made of his most remarkable work embracing his extraordinary opinions as to the intellectual inferiority of women to men.

That this rugged personality should have looked askance at women such as German civilization made possible, ought not to fill us with surprise, for our many readings in German literature have shown us that even the mildest, kindest specimen of the German genus, man, is quite a harsh critic of his womankind. Whether it was Schelling or Kant or Hegel, or to come to modern times, Schopenhauer or Nietzsche, who first taught Germania's sons their intellectual superiority, not only over their lesser sex, but over the entire world, we do not know, but the fact remains, that though the world at large may object to Germany's claim to the sum total of intellectuality, her womankind seems to take it as a matter not to be disputed, hence books of the Moebius genre. If Moebius had limited himself to that which German education, German culture, German emancipation has produced, our objections would not hold water, but with a pantheistic philosophy peculiar to all German scientists he included all womankind, thus evolving a work whose defects merit unmitigated censure.

The intellect of one country is unlike that of another; in fact, different ages in the same country show various crescendos or diminuendos as regards intellectual development. And this obtains among men as well as women and is due to so many conditions that the mere mention of them here would cover too much space. What the intellectual growth among the German women is to-day is unknown to us except as we read of it in the biased works of the Moebius stamp. But in other countries, where it is allowed some sort of liberty, it is better than the pollard German scientists would have us believe in.

Moebius' book of reminiscences, *Gedanken ueber die Schule, von einem alten groben Manne*. Leipzig, S. Herzl, 1906, published a few months before his death, ought surely to indicate the mental bent of this scientist. "Grobe" is not a pretty word, nor is it a favorite Anglo-Saxon one, but its significance in English when used as the noun, Grobian, as Burton does in his "Anatomy of Melancholy," is an exact synonym of what it stands for in German. And in both languages it means much of brusqueness, much of arrogance, much of undiluted boorishness. But

be it said in Moebius' favor, with him it meant extreme candor, the sort of ingenuousness that characterized Carlyle among the English.

It is a human document, this book, bearing "the seal of nearness to the workman's hand," and the man Moebius stands before us stripped of the glamor of scientific fame. But it is more than this, much more, for by the light of its illuminating pages we understand the spirit that prompted his distinctive works, his *Intellectual Inferiority of Woman*, his *Robert Schumann's Last Illness*, (*Ueber Robert Schumanns Krankheit*. Halle a. S. Carl Marhold. 1906). But though by this means we understand the mentality that made possible the work under consideration, we cannot forgive him the bias, the narrowness, the smallness of his mental horizon.

THE MEDICAL INSPECTION OF SCHOOL CHILDREN.

Of the utmost importance, not only to the present condition of our public health, but also to the future welfare of our citizens, is the question of medical inspection of school children, which is at present exciting a good deal of comment. The future of our country and race lies more in the efficiency of the public school than in any other single factor. A systematic scheme of medical inspection has not yet been put into practice in this country, and is only in its youth in England. Germany, however, has long recognized the value of such inspection, and has employed a corps of medical men to examine school children for some years. President Eliot, of Harvard University, is responsible for the statement that, in the primary grade of school life in this country, forty per cent. of the children are beyond the normal age for the grade in which they are working, and twenty to forty per cent. in grammar schools are over the maximum age for that grade. We need hardly state that mental progress is retarded, and mental dullness of marked degree often induced by errors of vision, deficiency of hearing and the presence of adenoids. In the superficial examinations made so far in this country, some remarkable statistics have been compiled. In Philadelphia, sixty-four per cent. of incorrigible children presented marked physical defects. In New York, where seventy-five thousand school children were examined during the last year, twenty-four thousand showed defective vision, sixteen hundred defective hearing, and fifty thousand nine hundred, had these and other defects that required medical attention. Lovett states, "it is of little use to know that twenty-six per cent. of school children have lateral curvature of the spine, and that it progresses during school life from about eighteen per cent. in the lower grades to thirty-three per cent. in the higher grades, unless we do something about it in the way of providing proper school furniture."

Statistics need not be piled up in order to convince. Though the movement in favor of school inspection by competent medical men is a recent one, it is generally recognized as a reform of great importance. Teachers, school principals and school boards should recognize to the full the significance of the recently developed statistics. Publicity, which is the best means at our disposal for creating or changing public sentiment, should be fully employed in behalf of this movement. The teachers in public schools should be taught the simple rules of hygiene, and the parents of the pupils should not regard the medical examination of their children, or the criticism of their hygienic condition as affronts, but should be taught to co-operate with both the teachers and the medical examiners, and should be thoroughly impressed with the importance of the fact that a properly formulated medical inspection of schools and school children has an element of strong preventive aspect, and would be an assurance and a protection of the health of their children.

EPIDEMIOLOGY.

The *London Lancet* calls attention to the lack of interest on the part of English medical schools in the question of lectures and instruction on The Public Health, and suggests that these lectureships should be better paid so that a better class of men will be attracted to the ever-expanding subject of preventive medicine. Also that the student of general medicine has his interest aroused in this subject by lectures that deal with the relationship of the general practitioner to the public health. In general the medical man need not be weighted down mentally with all the technical minutiae of administration which is required of a health officer, but he should be informed with the objects and aims of preventive medicine; he need not know the statutes relating to common lodging houses and the disposal of refuse, but he should thoroughly appreciate the means by which disease is spread, the relationship of the diseases of animals to those of man, the reason why disease attacks individuals and groups of individuals, and the relative value of food stuffs.

Any one of us needs only to harken back to his days as a medical student in order to realize that these important factors in the education of a physician receive scant mention, if mentioned at all. Be the attitude of English medical schools ever so lax on these subjects, we realize that we can show much greater laxity in our own country.

We do not advocate a long, tiresome course that would only burden the over-strained medical student's mind, but we believe with the *Lancet* that clear-thinking, active young men should be attracted to the study of Epidemiology and Public Health so that lectures may be given that will interest and inform and supply an absolute necessity in the curricula of our medical schools.

LITERARY NOTES.

The Chautauqua School of Nursing has issued what is probably the most complete book on nursing. Generally, in books of this sort, one branch is taken up quite thoroughly, while others are more or less neglected, but here we have an exhaustive treatment of a subject whose moment is daily increasing.

It would require unusual discrimination to single out this or that lecture as above others in importance and value, for they are all written in a scientific spirit, rare, indeed, in any work which appeals to all classes.

To illustrate our point, let us take the widely divergent subjects—Fever and Fever Nursing.—Typhoid Fever, and the Uses of Water in Treatment as presented in this work. The former, Lecture No. 19, covers 33 pages, and each and every minutia receives the attention it deserves. As for the latter, Lecture No. 15, the 37 pages are a resume, succinct and concise, which to cover in any other way, would require the reading of many books.

The letter-press is all one could desire, and the illustrations have a thoroughness and artistry rarely seen in works of this sort.

That the Egyptian medical student on leaving school does not think lightly of his future labors and holds in horror criticisms some of our American physicians rather court, is evidenced by the following quotation from the *Lancet* (London): "I swear, in the name of God the Most High, and of His sublime prophet, Mohammed, whose glory may God increase, to be faithful to the laws of honor, honesty and benevolence in the practice of medicine. I will attend to the poor gratuitously and will never exact too high a fee for my work. Admitted into the privacy of a house, my eyes will not perceive what takes place; my tongue will guard the secrets confided to me. My art shall not serve to corrupt, nor to assist crime, and I will not yield, under any pretext of persuasion, to prescribing any poison to anyone. I will neither give nor prescribe to any pregnant woman poisonous drugs capable of provoking or producing an abortion. Ever respectful and grateful to my masters, I will hand on to their children the instructions which I have received from their fathers. May I be respected by men if I remain faithful to my vow. If not, may I be covered with shame and despised. God is witness to what I have said. The oath is finished."

Folio Therapeutica is a new English periodical journal relating to modern therapeutics and pharmacology for medical practitioners. It made its initial appearance in January, and its general make-up is beyond cavil. As for its purpose the apposite words of the editor are worth while quoting: "It will be the aim of this Journal to devote itself to publications on the progress of modern Therapeutics and Pharmacology, and to present in a brief and concise manner the methods of treatment

and preparations which can be safely recommended for use, and which constitute a real advance in Therapeutics; and the evidence given for the reliability of any treatment or drug will consist in the unquestionable authority of the authors by whom, or under whose supervision, the investigations have been made." The Publishers are John Bale, Sons & Danielsson, London.

Hermann von Helmholtz, by Leo Koenigsberger, is a biography of the greatest interest to physiologists and ophthalmologists. Especially interesting to readers is the story of his life while professor of physiology at Koenigsberg, 1849-55. The great epochs of his career occurred during this professorship—the invention of the ophthalmoscope and the method of measuring the velocity of nervous impulses. The book is of great moment, and to those who are interested in the small beginnings and then the full fruition of an extraordinary scientific mind, it is a revelation and an uplift.

Sonneschein's *Cyclopedia of Education* (The Macmillan Company) is an excellent reference book for the doctor's library. The well-written articles are on the history, theory and modern developments of education. Especially valuable is this work to physicians connected as professors or lecturers with our many medical schools.

The Harvey Society of New York was organized in 1905, as a result of a feeling that the medical profession would welcome an annual series of lectures dealing with what is generally considered the experimental side of medicine, and given by those who devote themselves to experimental work. The lectures of the first year proved so successful that they have been put into book form by the J. B. Lippincott Company. They cover a wide range of subjects, and go far beyond the limits of ordinary medicine.

Sir Almroth E. Wright, the discoverer of the Opsonic theory, prefaces his new book, *Principles of Microscopy*, with the following characteristic words: The present text-book has no message to those who are content to follow a system of rule of thumb, and to eke this out by blind trial and error. It addresses itself to those who are dissatisfied with the results thus obtained, and who desire to master the scientific principles of microscopy, even at the price of some intellectual effort.

The latest addition to the Science Series (Putnam) is A. Forel's *The Nervous and Mental Hygiene*. This book ought to appeal to the scientist as well as to the layman, for whom it is specially written, since the author makes it a point to do away with all unnecessary technical terms. Nevertheless, the man versed in scientific expressions and who is inured to them, will not think amiss of a book, the reading of which is a pleasure and a delight on account of the ease of its diction and the distinction of its literary style.

ORIGINAL ARTICLES.

SUCCESSFUL OBLITERATION OF AN HEMANGIOMA CAVERNOSUM OF UPPER LIP AND INNER SIDE OF LEFT CHEEK.

BY FRANCIS REDER, M. D., ST. LOUIS.

When we speak of an angioma, we mean a tumor whose principal constituents are blood-vessels. By an angioma cavernosum, we would designate a tumor composed of a framework of connective tissue whose spaces are lined by endothelium and filled with blood. The character of this blood may be arterial or venous. These vascular tumors are of a non-malignant nature, although their histological formation closely resembles that of true carcinoma, the exception being that their spaces are filled with blood instead of with epithelial cells. Angiomata are congenital and increase progressively in size with the growth of the patient. The origin of these congenital vascular tumors is unknown. A theory that these neoplasms are caused by a dilatation of the capillaries, the walls of which eventually become absorbed resulting in the formation of spaces, has been favorably received. Virchow advanced a theory that angiomata find their origin in the embryonic relations where slight irritative conditions about the margins and the circumference of the foetal clefts, which are always copiously supplied with blood-vessels, may cause an abnormal development about these parts with the possibility of a naevus formation. Such a condition may remain latent for a time and may later manifest itself as an angioma. This theory is given as much credence as that of Simon, who became impressed with the idea that nutritive disturbances in the region of the trigeminus was causal in producing such a condition.

It seems that the face is the favorite locality for these neoplasms, two-thirds of these growths having been found there. Strange as it may seem women are more prone to this affliction than men, two-thirds of all cases occurring in women. The brow and the cheek seem to be the favored regions of the face for these vascular tumors; next in frequency come the lips, the nose, the ears, and the eye-lids.

Angiomata are divided into two classes, the simple or capillary, and the cavernous or venous. In the former the new vessels resemble chiefly normal capillaries, while in the latter the blood circulates through larger spaces.

The simple angiomata usually occupy the superficial layers of the cutis and form the so-called port wine stains and mother's marks. They can,

however, lie in the subcutaneous and submucous tissue and form large tumors. These growths are red, blue, or purple in color, according to the depth of the vessels. Usually when superficial they are red, and bluish when subcutaneous.

The cavernous angiomata are invariably of a bluish color. These growths may be diffuse or form distinctly circumscribed tumors. Their favorite seat is the skin and subcutaneous tissue. Numerous tortuous vessels furnish the blood which distends the spaces. Arteries open directly into the spaces, causing some of these tumors to exhibit distinct pulsations.

The growth of a cavernous angioma is usually gradual; it can, however, grow very rapidly so that the telangiectatic condition may assume alarming proportions in a comparatively short time (one to two years).

The diagnosis of a cavernous angioma is usually made without difficulty. Next to its bluish discoloration, which is invariably present in a tumor of large size, we find that its principal characteristic will be its partial or total disappearance (this depending upon the size of the swelling), when pressure is applied. The tumor will immediately reappear when the pressure is removed.

There is no pain in connection with such a vascular tumor, excepting when the swelling causes pressure upon a nerve.

The physician who is confronted with an angioma cavernosum cannot help but feel the gravity of this affliction, and if he has not, he will, realize in a comparatively short time that these neoplasms are amongst the most difficult lesions the surgeon can meet. Many of these tumors are looked upon as inoperable. Many again have been abandoned after some futile effort at relief.

All forms of operative intervention in these neoplasms harbor the great danger of hemorrhage. In nearly all instances this is alarming and exceedingly difficult to check. On account of the size of these tumors the application of the strangulation method has proved ineffective. Chemic decomposition with electricity or cauterization by means of a heated wire has given results that have only been partially satisfactory.

A method that can aptly be called the coagulation method has undoubtedly given the best results. It is the method submitted and practiced by Dr. J. A. Wyeth, of New York, and consists of injecting water at a high temperature into these angiomata.

My experience with tumors of this nature has been limited. I have had, however, one case under my care, and on account of the severity of the condition, the many disappointments this patient had suffered and the happy termination that crowned the work, I beg to be permitted to present a report of it to you.

With good health, a body full of vigor and free from any physical de-



FIG. 1. Hæmangioma cavernosum of upper lip and inner side of left cheek.

fects, the joys of life are assured. When we look upon a young woman in good health and of excellent build, with a mass as large as a hen's egg, bluish in color, occupying the site of the upper lip and hanging over upon the chin, our sympathy goes out to her for we know that this facial defect deprives her of many of the joys of life.

When I first saw this patient on June 6, 1906, I spoke very discouragingly to her because I did not know how much good nor how much harm I might be able to do her should I undertake to exercise my judgment and skill in her behalf. She had been to a number of physicians, good and bad, for the last five years, seeking relief and invariably returned home downhearted and discouraged.

This was the condition of her face: The right side, excepting two-thirds of the portion of the upper lip, was normal. The left side showed a marked swelling of the cheek which pushed up the lower eye-lid and encroached upon the left ala of the nose. About the malar prominence was an elevated bluish spot as large as a pea. The left nostril was considerably flattened, about one-half normal. Two-thirds of the cheek showed involvement in a tumor mass that hung down over the under lip within one-quarter inch of the margin of the lower jaw. The tumor mass was of a dark blue discoloration and appeared convoluted. Upon stooping this mass would increase in size very perceptibly. The swelling was soft, the skin covering it appearing very thin to the touch. Upon pressure it could be readily depressed and made smaller. The evidence that there was a cavity filled with fluid was unmistakable to the touch. The protrusion of the tumor was such that it was on a level with a line drawn from the tip of the nose across the cheek and down to the chin. The lower lip and the chin showed atrophic changes corresponding to the shape and contour of the tumor, caused by pressure of the overhanging lip. The incisor and canine teeth of the upper jaw had long been destroyed by the constant attrition of the tumor. Within the mouth there could be seen large bluish masses of mucous membrane lying between the molar teeth and filling about one-third of the cavity of the mouth. This caused an impediment in the speech. Fear of biting this mass during mastication of food and causing free bleeding was a constant source of danger. It was a great discomfort to the patient because of the difficulty in eating. The patient carried the tumor in a sling partly because it relieved the weight and partly because it hid from view the unsightly mass. This, gentlemen, was the condition of the patient's face. And now, what did we do for this unfortunate woman?

The idea that occurred to me at first was to reduce the pendulous part of the tumor with a procedure that incurred the least amount of risk. I thought this to be the ligation method, strangulation by introducing loops of silk subcutaneously along the muco-cutaneous margin of the lip. With



FIG. 2. Appearance of face on day of discharge October 14, 1906.

a very small cambric needle I ligated the lower third of the tumor. Small as the punctures were, the bleeding was most obstinate and continued for sixteen hours. With the aid of ice and pressure it was checked. The experiment demonstrated that it was not the procedure to be followed. The threads became infected and were removed on the fifth day. After nine days the infection had subsided. The condition remained the same excepting that about one-half inch of the lip on the right of the median line had contracted. Furthermore hard nodules could be felt throughout the portion that had been ligated.

The condition, as it presented itself after two weeks, gave me considerable encouragement, and I concluded to resort to the treatment of injecting boiling water. The risks seemed to increase while I was debating with myself to use this method, and I spoke very frankly to the patient of what might happen. This case seemed to me to be one particularly prone to risks inasmuch as so much mucous membrane had to be dealt with. To inject water boiling hot into spaces filled with blood is an operation not free from danger. What if through its injudicious use (and it is an exceedingly difficult matter to judge a boiling water injection properly), a sloughing of the tissues should take place, and after an arduous delay cicatrize, adding another defect, probably equally as bad, if not worse, to the already existing one.

What means have we to safely guard against the danger of embolism? These are indeed matters of vital import. They weigh heavily upon the mind of the surgeon who deals with boiling water and a cavernous angioma.

The first injection, under aseptic precautions, was made on June 25, 1906. Under ether narcosis, four ounces of boiling water were injected into the tumor. The needle, a small aspirating needle three inches in length, was inserted into the swelling through healthy skin on the right cheek about one-eighth of an inch distant from the tumor margin, and about one-half inch below the nose. In making these injections the advice of Dr. Wyeth was closely followed. All of the tumor was injected excepting the portion on the inside of the cheek. It required about fourteen minutes to inject the four ounces of boiling water. Time was lost by not having been able to obtain a Wyeth syringe. An ordinary glass syringe holding one ounce was used, the aspirating needle being attached to the syringe with rubber tubing. It was a clumsy way of doing this work, but it answered the purpose satisfactorily. The handling of boiling water is a rather delicate task.

While the injection was being made the patient's face was protected in the immediate vicinity of the needle so that the boiling water which was being forced out at the needle junction by the confined steam would not scald the skin. The hands of the operator were protected

by a folded towel. It did not serve the purpose well, and I would suggest to those who have occasion to handle boiling water to use heavy duck gloves.

To anticipate as far as possible any danger from embolism, peripheral compression was applied.

The introduction of the needle and the force applied in injecting the boiling water appears to me to be of great importance. If the needle is introduced too near the skin surface and the pressure used in forcing the water into the tissues is too great, a condition can readily be created that may cause sloughing, and this is to be avoided. In introducing the needle, it was carried through the mass till the point could be distinctly felt through the skin. The withdrawing of the needle about one-half inch gave a reasonable amount of assurance that the boiling water could be gently forced into the diseased area without causing sloughing. The needle was introduced in eight different directions, always through the same skin opening, however. In some places the integument turned pale, in others it was of ashen gray, while the water was forced into the tumor. The heat of the water could be very distinctly felt through the tissues—they were hot.

After the operation the patient was put to bed. The following day the left side of the face was very much swollen but not painful. The left eye was partially closed. A large blister had formed along the mucous border of the lip. The tumor felt hard to the touch. There was a slight rise in temperature (99.6). Two days later the temperature returned to normal. The patient left the hospital on the fifth day. On July 26th a large scab that had formed on the lip margin was removed. The whole tumor was hard (excepting about two-thirds of the tumor mass inside of the cheek). Diminution by granular metamorphosis had reduced the tumor to one-half its original size. I wish to state here that a linear sloughing of the skin occurred which extended from the ala of the left nostril to the margin of the lip. It resulted in a cicatrix that was but slightly disfiguring.

On August 2nd, under ether anesthesia, the buccal mucous membrane was injected with three ounces of boiling water. The outcome was most favorable, only a small slough resulting. Here I had looked for rather extensive sloughing.

August 18th, under ether anesthesia, two ounces of hot water were injected into the lip. Some difficulty was encountered in introducing the needle on account of the hardened condition of the tissues.

August 30th, under local anesthesia, one ounce of boiling water was injected into the buccal mass.

September 15th conditions began to take on a normal appearance.

September 25th, under local anesthesia, one ounce of boiling water was

injected into the outer portion of the lip which still appeared quite large. Ten days later the lip was almost normal.

On October 8th an injection of two ounces of alcohol* caused the lip to assume so near a normal relationship that any further intervention was deemed unnecessary and the patient was discharged.

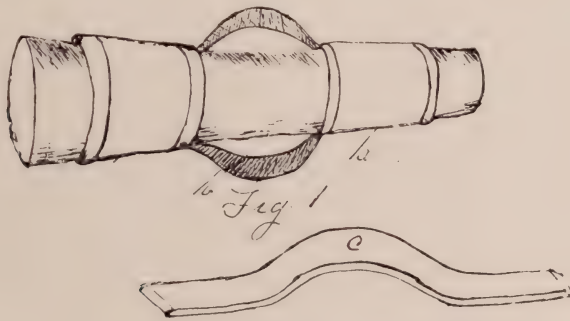
NONUNION OR VICIOUS UNION OF FRACTURES.

BY M. R. BARKER, M. S., M. D., Chicago, Ill.

In the discussion of this subject we do not include that class of old cases in which fractures seldom form bony union on account of the too-far spent forces of nature. A study of these cases, however, might afford some hint as to the cause of vicious union in younger and more vigorous persons. That we may more intelligently discuss this subject, and that it may be more easily comprehended, we shall first consider the normal, or usual, method nature pursues in repairing fractures. That which first happens, after a fracture, is the formation of a hæmatoma at the point of fracture unless the fracture is compounded and the blood escapes. Some have taught that this hæmatoma is made use of by nature in the process of repair, and that it is an essential factor in this process. That this position is not well taken is proven by the modern method of treating fracture of the patella, in which the fracture is cut down upon, the fragments coapted and retained by sutures of different kinds, and the wound closed with drainage, thus eliminating the hæmatoma from the case, and the cases going on to perfect bony union without delay and without any manifestation that any essential element in the process of repair was wanting. We know the hæmatoma is an unavoidable consequence of the fracture, which we believe nature disregards, excepting to eliminate by absorption as rapidly as possible; that instead of being essential to the process of repair, it is in every case a menace, and in others the direct or indirect cause of vicious union. In all cases of fracture, in the class we are considering, there is great damage done to the surrounding soft parts, this damage being more severe in some cases than others. If the damage has been of such a character as to destroy the function of the eliminating organs, in the neighborhood of the fracture, nature cannot relieve the part from the pressure and other vicious influences of the hæmatoma. Pressure upon these partially devitalized tissues, if continued for any length of time, will cause pressure necrosis of all the tissues, not excepting the ends of the fractured bones. Under

*In substituting alcohol for boiling water I wish to state that I feared too much of a contraction might take place with the use of boiling water and cause a deformity of the lip. I felt assured that in using alcohol the contraction would be but very little.

these conditions nature cannot pursue its usual or normal course of repair, and a vicious union, a direct cause of the hæmatoma, results. The hæmatoma in these cases forms quickly, and frequently so obscures and distorts all of the tissues about the fracture that the surgeon cannot recognize any of them nor manipulate them with any degree of certainty, and if he attempts to reduce the fracture, under these circumstances, he is as likely to fail, or only partially succeed, as he is to succeed, and as a partial or faulty coaptation of the broken fragments is a well-established cause of vicious union, the hæmatoma becomes in such a case the indirect cause of the condition. When such a condition prevails, the safest procedure is to put the patient in the most comfortable position possible, and wait a few days, giving nature an opportunity to absorb the hæmatoma. If it cannot do this then the surgeon's duty is to come to the aid of nature by draining the hæmatoma. This, if done under the strictest



a Casts above and below fracture.
 b Iron straps connecting casts over fracture.
 c Iron strap ready for use.

antiseptic precautions, can do no harm. While the patient is under the anæsthetic, the fracture is reduced and the fragments wired or otherwise retained in position, and the proper retention dressing applied externally, provision being made for the care of the wound. If the fracture is one of the bones of the upper or lower extremity, as it usually is, a bridge cast is the best dressing. This consists of two ordinary plaster casts, applied one above and the other below the point of fracture, and connected over the fracture by two iron straps, one on each side of the limb, and worked into the cast as it is made. (See Fig. 1.) These iron straps are one-quarter inch thick and an inch and a quarter wide. This form of cast will hold the limb perfectly and give ample room for dressing the wound. I have used this cast many times in compound fractures with perfect satisfaction; also in fractures of the patella, when the open method of treatment was used.

We understand by this procedure that we are violating one of the old

rules of surgery—never to compound a simple fracture. That old rule, under antiseptic precautions, is not so imperative as formerly, and should be modified, and might read—never compound a simple fracture needlessly, carelessly, nor without some requisite end in view.

It must be understood we do not advocate draining the hæmatoma in every case of fracture, but only in that class of cases where the hæmatoma is evidently causing great pressure upon the lacerated tissues, and completing their destruction, and in which the structures are so distorted that the surgeon cannot, with any degree of accuracy, reduce the fracture, and by reason of which nature is prevented from performing the usual functions of repair and cannot herself remove the offending hæmatoma.

Why should we be startled and horrified at the suggestion of the draining of an offending hæmatoma when we have repeatedly and calmly opened a knee joint to suture a fractured patella? Is it not time for thinking men to desist from the practice of straining at a gnat and swallowing a camel? We have stated that the first thing that occurs after fracture is the formation of the hæmatoma. This always occurs, but is no part of the process of repair, and does not enter into this process at any time. That which does first occur, and which commences in a few hours after the fracture, is the proliferation of cells from that part of the periosteum next to the bone. These cells form a granulation tissue between the periosteum and bone; also involving the periosteum to the extent of causing it to become thickened. This granulation tissue extends some distance back from the point of fracture, around each fragment, and between the ends of the fractured fragments. At the point of fracture the granulation tissue is much thicker than further back on the fragments, thus making a spindle-shaped mass of this granulation tissue. As time goes on this mass changes to cartilage, and later on to bone. Hence in a few weeks after fracture nature has formed a bony splint about the fractured fragments, which holds them in the position placed when the fracture was reduced. While the periosteum has been building this external splint, changes have been going on in the medullary canal. The adipose tissue of the canal, near the fracture, has disappeared and granulation tissue has taken its place. Presently this granulation tissue is transformed into bone, which is, by some, known as the internal callus. In the formation of this internal callus there is no intermediary cartilaginous stage as in the formation of the external callus. We must bear in mind all the time that the above procedure is a temporary one, and that the provisional callus produced by it only serves the purpose of holding the fractured fragments in position while the slower process of cicatrization into solid bony tissue takes place, and as rapidly as this is done the natural splint or provisional callus is absorbed, the fragments are united and dense cortical bone is formed. With the absorption of

this provisional callus the periostum and medullary canal resume their former condition and relations. When for any reason the continuity of the medullary canal is not maintained, when the fracture is reduced, a portion of the cortical bone of each fragment is absorbed and the medullary canal re-established.

When the above process is executed by nature the function of the injured member is soon restored. But nature does not always, for some good—though perhaps unknown—reason execute these steps in the usual process of repair, nor apparently make any effort so to do. A vicious union resulting. The surgeon now understands, full well, the difficulties that may confront him. Nature has failed totally to fulfill her function in the case. The question now is, can he so operate in the case as to procure the co-operation of nature? If so, well and good, otherwise failure will result with every effort. His first question is, why did nature balk in this case? And he looks about for an answer. Were the fragments properly coapted when the fracture was reduced? Was there a large hæmatoma pressing the parts for a long time? Was the injury produced by some ponderous body which would be likely to greatly interfere with the blood and nerve supply of the parts for some time? Was the nutrient artery of the bone destroyed? Did swelling of the limb take place inside of an unyielding dressing immediately after the fracture, and thus causing undue pressure for a long time? Was there any immobility of the fragments after the fracture was reduced? Is there any constitutional taint in the case, such as tertiary syphilis or diabetes?

All of these queries must be considered in every case of vicious union of fractured bone before any definite line of procedure can be adopted.

Probably the most frequent cause of this condition of any cited is the interference with the blood and nerve supply of the part at the time of fracture, thus so modifying the usual or normal course of nature that repair cannot be instituted at all, or if so, in such a feeble manner that only a partial result, or a fibrous union, is obtained. If in conjunction with injury to the nerve and blood supply there has been a faulty coaptation of the fragments, and by reason of this a greater amount of provisional callus must be provided in order to envelop the fractured fragments, and thus nature's burdens increased, she may not be able to repair the injury with the faulty coaptation, while without it she would have succeeded. Faulty coaptation of the fragments is probably the second most frequent cause of vicious union. We have already spoken of the part played in these cases by the hæmatoma and have expressed our ideas as to its management.

The careful coaptation of the fragments, the careful application of such dressings immediately after the fracture as will not cause undue pressure by reason of the swelling of the parts, and the proper dealing with an offending hæmatoma, are prophylactic measures of great value.

and should be borne in mind by every surgeon, in all fractures he is called to treat, especially of bones of the arms and legs.

While there are some cases of vicious union, due to the constitutional taints above cited, they fortunately are very few, and constitute the cause in the smallest group of cases. We say fortunately, for this reason: If the usual work of repair is nullified by a constitutional taint, it is probable that no effort of the surgeon will be able to so modify it that nature can perform her function, hence in these cases the prognoses is always grave.

It is an old and widely accepted theory that this condition is due to the intervention, between the fragments, of some of the tissues about the fracture. In fact, every tissue in the neighborhood has been incriminated—nerves, muscles, fascia, periosteum—have each been indicted and were each equally innocent. The contractile quality of most of these structures, when sundered, would prevent their being caught between the fragments, and would release them if they were caught. It is so improbable that this is ever the cause of this condition, unless in very exceptional cases, that its discussion is useless.

The question of greatest importance is, in these cases, what can we do to aid nature in restoring the usefulness of these members? The examination of the history of these cases reveals different lines of treatment, all having their successes and failures. Irritation, produced in different ways between the fragments, has been in vogue for many years. This irritation has been produced by rubbing the fractured surfaces together; by injecting irritating drugs between them; by driving nails of different materials into the fragments, thus fastening them together; by the use of the seaton; by wiring the fragments together; by resecting the ends of the fragments, bringing them together and using wire or nails as the irritating agent; the idea in all of these methods being to spur nature on to a greater effort at repair by the irritation produced. If the vicious union is caused by some constitutional taint, together with irritation, there must be used some treatment for the discrasia, probably a forlorn hope at best. We believe the best treatment in these cases, guided by the strict laws of antisepsis, in that class where irritation is indicated, is one of two procedures, the selection in any case, of either of these procedures, to be determined by the condition of the periosteum at the seat of fracture as shown when exposed by an incision. If the periosteum is pretty well intact, and can be united perfectly over the ends of the fractured fragments clear around the fracture, by sutures, it is best not to molest it more than is necessary in curetting all the fibrous tissues and debris from the fractured surfaces, and rendering these surfaces as nearly like newly fractured surfaces as possible. The fragments are then placed in perfect coaptation, and wire sutures placed about one-half inch apart, extending nearly through the thickness of the bone. They

are then drawn as tightly as possible, without breaking, by twisting their ends together. The periosteum is now carefully united, where torn, all rents in it being closed by fine catgut sutures; it is then placed as nearly as possible in the position it was in before the injury—that is, the line of fracture clear around is lain over with this blanket of periosteum. The superficial tissues are now closed, with drainage, and the limb dressed in the fixation bridge-splint, or cast, before described. Should the periosteum be lacerated, and bruised, and stripped back from the bone, and in such condition that it cannot be repaired and made functionally active at the point of fracture, it must be stripped back to a point a little beyond where it is normal, or nearly so. The end of each fragment is now resected as far back as the periosteum has been stripped from the bone. We may have to sacrifice an inch or more of bone in this procedure. The end of the periosteum, in the deepest portion of the wound, is now sutured together over the line of fracture; the superficial surface of the bones are now brought together and the suturing of the periosteum completed, clear around the bone, and the line of fracture covered by it. The fragments now being in apposition, they may be wired or pegged together as best suits the operator. The superficial structures are closed, with drainage, and the bridge cast used as above. These two methods best meet all the indications, in a surgical manner, when the irritation method is indicated. After the indications have all been met, and the best treatment carefully carried out, there is quite a large per cent of failures, nature absolutely refusing to co-operate with the efforts of the surgeon. If failure is the result the surgeon may advise waiting a number of months, or perhaps a year, hoping that the forces of nature will be restored, and then try again. This has succeeded in a number of cases and is the best method to pursue. If failure still results, some apparatus may be used or the limb amputated. We might here, with propriety, allude to the importance of this subject. Burns has collected over 1,200 cases which were treated by different methods, but unfortunately only gives the results of those treated by resection. In these there were only 56 per cent of recoveries. Von Bergman's *Surgery*, Vol. III, page 134. In the same work and volume, page 135, 187 cases are reported, all treated by resection, of which 73 were unimproved. These reports are of little value, excepting as they tend to show the frequency of this condition, as most of the work was done prior to the time of antiseptic surgery. Sharpless, in a recent article—*Journal American Medical Association*, Oct. 28, 1905—refers to 150 cases, recorded in the *Cyclopedia of the Practice of Surgery*, published about the fifties. These cases were treated in various ways, with the total result of 29 per cent remaining uncured. These cases, like the above, were treated before the time of antiseptic surgery. According to the best information we can obtain, about 1 per cent of all frac-

tures result in vicious union. In this estimate, fractures of the patella are not considered, and as the condition occurs almost always in fractures of the bones of the leg or arm, the per cent of these fractures in which this condition obtains must be much larger. It is a fact that this condition occurs quite frequently, and that a large per cent of them are not benefited by any known treatment, and that the death-rate following these treatments is by no means inconsiderable. These things being true, every surgeon should bear in mind the possibility of this condition complicating every fracture he is called upon to treat, especially those of the arm and leg, and inaugurate every prophylactic measure known.

4625 Greenwood avenue.

LESSONS TO BE DRAWN FROM FORTY-THREE RECENT OPERATIONS ON THE STOMACH.

BY WILLARD BARTLETT A. M., M. D., ST. LOUIS, MO.

The result of modern operative work on the stomach serves, possibly, as the best example of the striking progress made by surgical therapeutics in the past few years. However statistics founded on gastric operations performed more than three years ago, when the technique was but partially developed, are of comparatively so little value, that I lay especial emphasis on the fact of these remarks being confined to the results attained in forty-three consecutive operations performed in the recent past.

Fifteen of these were for cancer of the stomach and twenty-three for gastric ulcer. Gastro-enterostomy was done twenty-seven times and seven resections of the organ were made. In three cases there was cancer so extensive that I had to content myself with a simple exploration, while in two others, having perforated gastric ulcers to deal with, I resorted to drainage alone, the condition of these patients being too critical to warrant anything further. There were two atonic dilatations for the correction of which gastropexy was undertaken. In one patient, suffering from perigastritis, the organ was so deformed and the pylorus so bound down with old adhesions that I did a gastro-enterostomy for drainage; in one instance drainage of the gall bladder into the stomach was instituted, for the relief of jaundice, due to complete obstruction of the common duct by cancer of the head of the pancreas. The forty-third operation was done for gastric hemorrhage due to a gunshot wound of the abdomen. Here the work consisted in ligating bleeding vessels at the minor curvature.

Only four of these patients in whom a stomach operation was undertaken for the relief of gastric conditions, died in the hospital from any causes whatsoever. One of them, seventeen days after gastro-enterosto-

my, died from vicious-circle while another succumbed to acute bronchitis six days after a resection, free from abdominal symptoms and taking plenty of fluids. A third was also free from abdominal symptoms and taking nourishment three days after a gastrectomy, when he expired suddenly as a result of pulmonary embolism. Too long an operation resulted in the death of the fourth patient; the procedure took an hour and a half, during which time I removed the patient's gall bladder after having made a suture gastro-enterostomy for cancer. In view of this single experience we now give the most serious consideration to the prevention of post-operative shock by using the minimum quantity of ether as well as by finishing the various types of operation within the following period, viz.: button gastro-enterostomy fifteen to twenty minutes, suture gastro-enterostomy thirty to forty minutes, gastrectomy forty-five to sixty minutes.

It will be seen from the above that we lost only one patient in direct consequence of the forty-three operations, and in order to show that this work, viewed from any standpoint, is becoming safer with increasing experience, I will state that we have not lost a single gastro-enterostomy or resection patient since November, 1905, nearly a year and a half ago.

Many cases are alike in all particulars, hence there is no object for my including all the details of every one. I believe that more can be accomplished by giving particular prominence to rare or especially interesting manifestations of a few, which may prove to be unusual. This, as above stated, is a virgin field, and every uncommon observation is of value, as a large number of them, taken from various operators, must finally go together to make up the sum-total of our knowledge on the subject.

The danger of post-operative hemorrhage is strikingly illustrated in the following case:

Mrs. C., a resident of St. Louis, 41 years of age, born in Alabama, housewife, married; had been a sufferer from indigestion for twenty years. I will not go further into the history than to state that it was impossible for the most careful physical and chemical examination to make an absolute diagnosis between ulcer of the duodenum and disease of the biliary passage. However, on March 27th, 1906, her abdomen was opened; just below the pylorus, on the upper surface of the duodenum was found a thick scar, about the size of a nickel. The pylorus was narrow, the stomach dilated and hung low. I did a posterior suture gastro-enterostomy, after the new method of Wm. J. Mayo, published in the *Annals of Surgery* of April, that year, and got the patient back to bed in first-class condition. About four hours after the operation, she commenced, slowly, to collapse, and grew gradually worse, until the evening of the same day, when her pulse had reached 150 and was so small that it could hardly be counted; her respiration was

labored; temperature slightly elevated, and she seemed in a desperate condition. Percussion revealed the stomach distended, until it reached from above the umbilicus to the pubis. Through the tube I washed almost half a gallon of dark, bloody fluid out when she seemed greatly relieved, and her condition improved somewhat. The next morning, about a quart more of the same kind of fluid was washed out of her stomach, while her pulse remained about 150 and her respiration about 40, during that day as well. She grew so weak that she could not speak above a whisper, and seemed upon the point of death. Thirty-six hours after the operation she commenced to take champagne, her pulse gradually grew slower, and of better quality, and in a day or two she was very decidedly better. Two days after the operation she had three large bloody stools, and complained of being hungry. Five days after the procedure, she was doing finely, in every particular, and a week later taking general diet, without discomfort. She is now hungry all the time, and for the first time in twenty years can eat absolutely everything she wants.

No doubt, these hemorrhages came from the anterior lips of our visceral incisions. The posterior ones are united by a lock stitch, whereas, this is scarcely a physical possibility for the anterior lips. The Mayos re-operated on such a case, found the bleeding point, and ligated it, with ultimate success. However, I should never have dared to do anything of the sort, in the condition which my patient found herself, when a ligation was most urgent.

In my next case I will report a complication of the modern no-loop operation, the like of which has not yet been recorded in surgical literature. My friend, Dr. J. G. Mumford, of Boston, reported a case recently in the *Annals of Surgery*, which is somewhat similar. However, it differed from mine in that his was an abnormal subject to begin with, whereas nothing unusual was noted in the anatomy of the abdomen, with which I had to deal.

Mr. M., 50 years of age, had lost thirty pounds in two years. He had had a history of long continued stomach trouble, and taking everything into consideration, we were hardly able to state in his case whether we had to deal with a chronic ulcer, pure and simple, or the same thing, upon which cancer had been grafted secondarily. However, the need of an operation was apparent, hence on Oct. 25, 1905, his abdomen was opened and a thick, white scar, the size of a dime, marking the site of an ulcer on the anterior aspect of the pylorus was seen. There was distinct spasm of the latter, even under ether, so a posterior suture gastro-enterostomy was made, after the method of Moynihan, which, as those of you know who take an interest in stomach surgery, contemplates a twisting of the gut on itself, so that the jejunum falls from left to right, instead of in the opposite direction, which

Dr. Mayo has just shown should normally obtain. Five days later, he begged for beefsteak, and at the end of a week after the operation, he commenced to vomit, this continuing until he retained absolutely nothing. We got him up on the 10th day and out in the yard on the 12th, trusting that this would have a beneficent influence, but at the expiration of two weeks from the time he was operated upon, the vomited material had a fecal odor, and further surgical interference was deemed absolutely imperative. Upon again opening the abdomen, we found the following astounding picture:

The stomach, which had been greatly dilated, was now shrunken and retracted so high up under the ribs that the greater curvature was higher than the point at which the duodenum passed through the mesentery, hence, the one-inch loop of jejunum, which had pointed downward at the completion of the first operation, now pointed upward, the bowel being sharply kinked at the suture line. The efferent bowel was flat, while the afferent was immensely distended, showing that no bile ran past the kink, but all was thrown from the duodenum directly into the stomach, and vomited. It seems that the modern short loop, or, as called by some, no-loop, has at least this one distinct danger, namely, that perfect gastric drainage may result in so much shrinkage of the organ as to pull the new opening higher than the level at which the jejunum originates and thus lead to a kinking, which would not be so likely to occur if the two points above mentioned were separated by six or eight inches of movable gut, as was formerly the case before the short loop came into vogue. In this case I succeeded with the greatest difficulty in making an entero-anastomosis around the kink, and had the satisfaction of seeing the lower bowel fill up at once. In addition to this, the patient never vomited again, but the second operation was too much for him, in his feeble condition, and two days later he died.

A recent case illustrates very nicely the inability of gastro-enterostomy to permanently cure certain of these benign cases. In July, 1904, I did a posterior suture gastro-enterostomy upon Mrs. K., then 41 years of age, who had, for many years, suffered all the classical symptoms of gastric ulcer. Several scars were found and her condition was so completely relieved by the operation that, for about eighteen months, she ate absolutely everything, gained some twenty pounds in weight, and was able to take up once more her work as housekeeper. Then in December, 1905, her old symptoms recommenced; she had pain high up and a little to the left of the median line, vomited frequently, this often having blood in it, got so that she could not eat solid food without distress, lost weight, and, in fact, became physically so reduced that she came to me begging a re-operation.

On the 21st of April, of this year, I opened the abdomen once more

and found the gastro-enterostomy opening, apparently as wide as I had left it, without even an adhesion around it, and the pylorus open as well. In fact, the mechanical status seemed to be all that one could desire. However, the stomach was adherent to my old scar in the abdominal wall, and considerably distended, hence I determined to resect the ulcer-bearing area, including the scar, and thus do away with whatever element of crippling this might produce. The operation was easily accomplished, and, to my astonishment, when the viscus was opened, I found three typical round ulcers, lying side by side, on the lesser curvature, in spite of the fact that this stomach had two good points of drainage. As might be expected, the patient has recovered perfectly from her symptoms. She was up in a few days, and three weeks after the operation went home, eating a general diet, and expressing herself as being perfectly pleased with the outcome.

I just stated that resection has completely displaced gastro-enterostomy in the treatment of cancer wherever this is physically possible. However, there are still a large number of patients whose fear, or, in some cases, I am sorry to say, whose physicians keep them from having an operation done, until that fortunate early period is passed, in which a resection is possible and feasible. It has been my misfortune to encounter quite a number of these patients, and to show what striking benefits are manifest for a short time after gastro-enterostomy in some cases, I will mention the following three:

Mrs. F., 54 years of age, came to be operated on the 16th of September, 1905, after having lost sixty-seven pounds, vomiting everything and living on fluids for many weeks. When her abdomen was opened, it was seen that she had a carcinoma at the pylorus, which had invaded the pancreas to such an extent as to render resection impossible. The stomach was immensely dilated, and, in view of her reduced condition, an anterior gastro-enterostomy was made with the button, not more than fifteen minutes being consumed in the whole operation. The next day she stated that she felt the greatest relief, being free from the annoying peristaltic movements for the first time in many weeks. She did not vomit again after the operation. Three days later she was up in a chair, and six days afterward was walking around, hungry, and begging to go home. Eight days afterward she ate general diet without distress, and on the ninth day was sent home feeling stronger than she had for a long time. On the thirteenth day she attended her son's wedding, took part at the repast which characterizes such occasions, and when I last heard from her, a few weeks later, was rapidly regaining weight.

Mr. M., a saloonkeeper, had a simple Murphy button gastro-enterostomy done on the 24th of February, 1906. For days, previous to this time, he had vomited everything he ate and drank. He had lost

seventy pounds in ten weeks and was in every particular a pitiable object. The day after the operation he was entirely comfortable and did not vomit again while he was in the hospital. On the eighth day he was up most of the time; on the eleventh, he was eating everything, and on the thirteenth went home apparently in first-class condition, gaining in weight, with no stomach symptoms. This day, less than two weeks after the operation, he was found tending bar by one of my assistants who chanced to visit his place of refreshment. Two and one-half months after the operation I saw him again, and he stated that his old pains had returned, showing that the dreaded malady was now re-asserting itself, and he will, no doubt, soon pay the price, which an earlier radical operation might have saved him.

A third patient furnished the most striking example in all my experience of what can be done by gastric drainage in cancer of the pylorus. A few days ago, on the street in St. Louis, I met a plump, red-cheeked woman, who seemed to know me, and after a second glance I noted a family resemblance which led me to inquire after the condition of her sister, remembering that I had done a gastro-enterostomy for cancer on one of three similar-appearing sisters, some months before. The lady smiled and said, "I am the sister to whom you refer." When she said that she had gained forty pounds since my operation of six months ago, it is readily understood why I mistook her for her overly-healthy relative. It is possible that our eyes deceived us in the character of her lesion, but several gentlemen, for whose knowledge of gross pathologic anatomy I have the highest respect, were present at the operation and confirmed my opinion that it was a cancer of the pylorus and lesser curvature, which had invaded the transverse mesocolon to such an extent that radical operation was not to be thought of. Further comment on this case is, I trust, unnecessary.

The faulty mechanics of our older methods in this work are well brought to light in the recital of a case in which I was recently forced to re-operate.

The patient is a Miss W., thirty-six years of age. My first operation in her case was done three years ago this month. There was a typical history of gastric ulcer with vomiting of blood and at the operation the lesion was found near the pylorus. I did a posterior, suture gastro-enterostomy with a loop about eight inches long, as was common at that time. In addition I short-circuited the loop by connecting the two limbs with a Murphy button.

Now the interesting part of all this comes when I relate that after six weeks of such health as she had not enjoyed for years, she commenced to vomit bile in spite of the entero-enterostomy and has continued to do so up to the present time, or rather, up to last month when I again opened her abdomen and found both anastomoses about the size originally made

and the ulcer completely healed as far as the exterior of the stomach showed.

It is of value to have demonstrated in this way that bile will flow past an opening in the gut and gain access to the cavity of the stomach.

Since the second operation the patient has not vomited, and in fact I have demonstrated by lavage that there is not a trace of bile in the stomach. This second procedure consisted in cutting the bowel in two just above the entero-enterostomy and implanting the upper portion into the side of the lower. This completed what is known as the Roux "Y" anastomosis.

One of the more recent developments in stomach surgery has been the attempt to treat the dragging down tendency of atonic dilatation by gastropexy.

On account of the fact that the individuals thus affected are almost always neurotics and consequently hard to benefit permanently by any sort of treatment, one hesitates to attempt this operation. Especially did I enter upon this subject with trepidation in view of the fact that stomach surgery has had most of its failures to chronicle in just this class of cases, in which formerly fruitless gastro-enterostomies and other drainage procedures were undertaken. However, some excellent names are behind this procedure and I have tested it twice.

One of these cases was operated upon four months ago and the second two months ago. The procedure and the subsequent history is the same in the two and, on account of the second being too recent to be of much value, I will recite the history of the first alone.

The patient was a woman thirty years of age, white and unmarried. She had suffered from pain in the abdomen at intervals since she was fourteen years old. Serious indigestion had commenced three years ago, without known cause. At first she had vomited a good deal but not much recently and never any blood. A feeling of pressure and discomfort in the stomach region always commenced about an hour after eating. She is constipated and has lost in weight from 108 to 93 pounds. On account of the distress caused by food she has gradually limited her diet to eggs and milk. The pain is so great on standing up that she lies down most of the time, which gives more or less ease.

Physical.—The patient is a small, delicate, emaciated individual whose lower costal cartilages meet at a very acute angle. She complains of great pain when pressure is brought to bear in the middle line half way between ensiform and umbilicus. At about this point a transverse, sausage-shaped resistance can be felt which is tender on pressure. The stomach is dilated and extends with its lower border about two inches below the umbilicus.

Operation.—The abdomen was opened and the stomach found to be

distended and lying so low that its minor curvature was not one inch above the umbilicus. The pylorus admitted my thumb and the duodenum was greatly distended in its first portion. To correct the displacement five interrupted silk stitches were used at intervals to unite the greater curvature to the anterior abdominal wall at about the former level which the lesser curvature had occupied. These stitches were placed a little more than an inch apart. The patient vomited a few times after the operation, but aside from this made a perfect recovery. Four days later she stated voluntarily that the dragging pain in the stomach region was gone. In a week she found that she could take soft food with very much less discomfort than before the operation. A few days later a forced general diet was commenced, the patient taking six small meals a day. Within four weeks from the time of the operation she had gained considerable in weight and in spite of the large amount eaten, remained completely free from digestive symptoms of any kind. Almost three months after the operation I heard from her physician that she was entirely free from the old dragging pain which had formerly caused her to lie down most of the time, was eating everything and considered herself a normal individual.

I only trust that when a sufficient time to judge such a case has elapsed that her condition may remain satisfactory.

My personal experience with resection, as opposed to gastro-enterostomy whether in the treatment of cancer or of ulcer, has been so decidedly in favor of the former that I cannot help expressing the hope, and indeed the opinion, that we will become more and more radical instead of less so in the treatment of all well-defined organic stomach lesions. No surgeon of the present date, who is at all conversant with gastric work, thinks of doing anything but a resection for malignant trouble where this is by any means possible, and I am firmly convinced that the same stand will one day be taken regarding surgical ulcer. I have seen gastro-enterostomy cure an ulcer patient immediately and for all time, but I have also seen a few results which were not ideal. However, the resection cases do brilliantly from the start and, other things being equal, they can be sent home with a much more positive assurance of definite cure than is possible where the simpler operation is done.

To illustrate the point I cannot refrain from reciting the case of a gentleman whose stomach I resected only a few weeks ago. The history was,—he is fifty-five years of age, white, a business man and married. He has suffered from digestive trouble for fifteen years and, without going into details, I will simply state that this has been chiefly a matter of pain of a character so intense that morphine practically failed to give relief. He has vomited blood and had blood in the stools. The contents of the stomach are of an acid re-action and a mass the size of a

lemon can be felt a little to the right of the middle line, two inches above the umbilicus. When the abdomen was opened this mass was found to be one of the largest callous ulcers that I have ever seen, in the lesser curvature, extending onto the anterior and posterior stomach walls with tiny nodules on the anterior wall and fairly large glands along the minor curvature. I did a resection after the second Billroth method, the whole procedure taking a little less than an hour.

The night before the operation he could not sleep for pain, and a few hours before it he vomited an immense amount of blood. However, after the procedure he never vomited again, has not had one twinge of pain to the present time, his pulse has never been rapid, he began to take a general diet on the tenth day, was up on the twelfth, went home within three weeks from the time he entered the hospital and tells me now that life is worth living for the first time in fifteen years.

The gastrectomy patients give practically this history without exception, while the same cannot always be said where one contents himself with a gastro-enterostomy. In the instance under discussion it would have been little less than criminal not to have made a resection on account of the possibility of secondary cancerous involvement and one must take into consideration the likelihood of cancer engrafting itself upon an ulcer where there are at the time of operation none of the external evidences which were present here.

I have not yet received the pathologist's report on this case so am not prepared to state definitely the character of the lesion, but in either event the patient has an excellent chance to remain well.

The time which has elapsed is still too short to enable me to say very much about definite results in the cases now under consideration. However, it is not without value or interest for my readers to know what has been accomplished up to date. In this connection I will consider only the patients upon whom I did gastro-enterostomy, resection and gastropexy.

It will be remembered that two patients died after gastro-enterostomy and two after resection. This leaves twenty-five of the former, five of the latter and two on whom the position of the stomach was corrected. Twenty-one of these patients suffered from benign and eleven from malignant diseases. I have only been able to keep in touch with eighteen of the former, two of these the gastropexies—as has been stated above, being in the best of condition to date. This leaves sixteen benign patients.

Six of them have had no more stomach symptoms since the operation, some being among my very earliest cases. One remained perfectly well for six months and then died of a lung affection. Four considered themselves cured for a period of several months and may

now be regarded as well at times, or one might better call them in general "improved," and I believe that these four patients would be reasonably comfortable if they could only be induced to live rationally. In two other cases it is still too soon to make any prognosis. However, I will state that both are completely free from symptoms a few weeks after operation and express themselves as being already recompensed for the ordeal by this temporary relief from pain, no matter what the future may have in store. Two of my benign patients received absolutely no benefit from surgical treatment.

I can tell more about my malignant cases than about the others, since I know the history to date of all the eleven who survived gastro-enterostomy or resection, making no count of the three whom I simply explored. It will be remembered that one resection and one gastro-enterostomy for malignant diseases resulted fatally.

There was the most marked immediate benefit in every instance. All of these patients stopped vomiting and commenced to eat very soon after the operation. Three of them lived nearly a year after gastro-enterostomy and of these three, two remained free from stomach symptoms and gained astonishingly in weight during the greater part of this time, while the third did about as well, excepting in so far as weight is concerned, she being seventy-five years of age. One dropped dead on the street two weeks after leaving the hospital. In this connection it is interesting to know that he had just been able to eat a fairly hearty meal without stomach symptoms.

Four lived from two to six months after the operation with varying periods of freedom from symptoms. Three are now alive two weeks to six months after the procedure and at least two of them are in a condition of relative comfort.

I have attempted in the above to make out a reasonable plea for more and earlier gastric surgery. I believe I have shown that the work is not more dangerous than other operative lines, to which we all recommend our patients. The time is passed when we allow a sufferer from appendicitis, or gallstone disease, to go on gradually to death, or chronic invalidism, and shall we not now take the same common sense, businesslike view of the stomach diseases; which have been shown to be highly amenable to surgical treatment?

SOME OBSERVATIONS ON INFANT MORTALITY AND ITS CAUSES IN THE CITY OF MANILA.

BY EDWIN C. SHATTUCK, M. D., Manila, P. I.

It is not the object of this paper to go deeply into the subject; in fact, to do so at this time is impossible. A brief presentation of some of the facts may be useful, even if nothing more is accomplished than to suggest lines for future investigation.

In an inspection of cadavers reported to any Health Station in Manila one's attention is immediately attracted to the large number of deaths among children. During the past year the writer has made a point of seeing as many as possible of these bodies, first, to avoid passing any contagious cases, and second, to learn what was possible from the appearances presented.

It is no news to most of us that the infant mortality of the city is 50 per cent. The general predisposing causes are the same here as elsewhere, but there are certain features that are peculiar, if not to Manila, at least to the Philippine Islands. The lack of preventive sanitary measures among the common people, and the deep-rooted prejudice against them, must be seen to be appreciated.

In a study of mortality it is fitting to begin with the births and the conditions surrounding them. Too true is it that "when we begin to live we begin to die." Under what circumstances does the average Filipino baby enter upon the struggle for existence? No trained nurse awaits with warm bath and soft blanket to minister to his needs. A doctor is not thought of. Each Health District has one or two municipal midwives, and about the same number of licensed midwives doing private work. The districts contain on an average 35,000 population, with 200 to 300 births per month for each. It is apparent that the majority of these are without qualified assistance. There are throughout the various districts numerous women who claim to be midwives by experience, and who are employed by the poor and others for lack of other recourse. These receive as compensation their board and lodging for the time, and probably a few pesos when the money is on hand, though as a rule, they deny receiving anything on account of their being unlicensed. What is the effect of their work on infant mortality? It is believed that one-third or more of the still-births are preventable. Among some of the customs that are not conducive to a good result for the mother or child, is that of winding a rope about the abdomen below the umbilicus, crossing the ends and having two persons pull strongly on them in opposite directions. It is stated that this is done, not as might be supposed, to compress the uterus, but to draw together the pelvis, it being feared that the symphysis pubis will be dislocated during the labor.

There are instances of the patient having been almost cut in two in this way. Again, rough kneading of the abdomen during difficult labor, or even standing and jumping on it are practiced. In a case, recently sent to the morgue, of a pregnancy at term with breech presentation, the violence used in attempts to effect delivery with the rope about the abdomen, etc., had broken the eleventh rib, forced the point of a fragment into the liver, rupturing the latter and setting up internal hemorrhage. My experience after such cases is that it is impossible to find the perpetrators of the atrocity. The unlicensed midwives, parteras or intrusas as they are variously called, make examinations with the finger during the progress of labor without any preparation other than dipping the hand in cocoanut oil, disdaining to wash, and usually having a cigarette or betel-nut in the mouth. Under these conditions it is not difficult to foretell what awaits the unfortunate infant should it survive the ordeal so far as to have the cord dressed and to receive a bath. The cord is cut with ordinary scissors, or a knife, and tied with varying material, all guiltless of sterilization. When left to her own devices the favorite dressing for the cord with the partera is cigar or cigarette ash, or worse, a wad of buyo, which she has been chewing. The Bureau of Health furnishes an umbilical package which the municipal midwives use, and which are furnished gratis to the poor when called for. The others are recommended, and even required to use lycopodium, or boric acid as a cord dressing. We frequently find cases where the irresponsible partera has disregarded all instructions. Death from umbilical hemorrhage is not rare, in some cases occurring early, in others the hemorrhage being coincident with umbilical infection, or again, the municipal physician may certify tetanus or infantile convulsions. On one occasion a body was found with the cord cut off close, and without sign of a ligature. The child had lived five hours; there was no apparent hemorrhage, but as the cause of death could not be determined, the office of the prosecuting attorney was notified and an investigation made, but without result.

It was formerly my impression that the induction of criminal abortion was unknown, or very rare among the islanders. Several months ago a four months' fetus was found in the garbage in the Santa Cruz market. No evidence was ever obtained of how it came there. An extract from an article credited to Dr. Hayes, U. S. A., takes the ground that abortion, far from being rare here, is frequently procured, and that the bark of the salchichi tree is given in the form of an infusion as an abortifacient by the native parteras, and produces the desired results. I have been unable to verify this statement.

It seems appropriate here to mention some curious customs which must have some effect on our death rate. Certain persons among the

people, called *medicillos*, were formerly in the habit of practicing on a small scale in Manila, and do so still in the provinces. One of their customs was to make numerous small incisions, thirty or more, on the chest, back and arms of the newborn child "to prevent its getting sick." The incisions were about a quarter of an inch in length, and were made with a small lancet. It is likely that some of these unfortunate children helped to swell the number of deaths from convulsions. This practice has for some time been discontinued in Manila, though it is said still to be followed in the provinces.

Another popular remedy is to make numerous small burns an eighth of an inch in diameter, over a part supposed to be diseased, or over the whole body, as a remedy for convulsions. The burns are effected by actual cautery, by means of burning cocoanut wood fibre. I found many bodies with scars from these burns. It is a form of cruelty that should be prevented.

Circumcision is commonly performed by the natives on young children. A longitudinal incision slitting up the prepuce above constitutes the entire operation. I have never seen any deaths following this operation.

Under the classified list of causes of death we find "lack of care". This seemed strange to me two years ago, but in the light of to-day it would be the correct diagnosis for many deaths appearing under other headings. If educated, many of the parents are little less than criminally negligent; if ignorant or poor, they must be, as stated by some, fatalists.

A large proportion, so large I hesitate to estimate it, of the children die without medical attention, the doctor being called in only to furnish the death certificate. In many cases the doctor has been called in once, perhaps a week or a month previous. Under these circumstances the private practitioner, or the municipal physician, as the case may be, must make a diagnosis from the history as far as it can be obtained, and from the appearance of the body, or, failing to do so, may certify "undetermined". In the latter case, the medical inspector must decide whether or not the case shall be sent to the morgue. In general, bodies with cholera, plague or variola, or when suspicion of contagious disease exists, are sent to the morgue, and it is important to clear up the doubt in the interests of the public health. Bodies dead of unknown causes, evidently non-contagious in character and showing no evidence of violence or crime, are not sent to the morgue. In the early days of our sanitation here the greatest opposition prevailed to contagious cases being sent to the morgue or to the hospital, as the case might be. Within two years I recall several instances in which the family stated their willingness to pay well for the privilege of exemption from the usual requirements. It was impossible, therefore, in many instances, to get a

true history of the cases, some of the more intelligent as well as most of the ignorant trying to avoid direct answers to questions asked about the deceased. I have seen question after question parried by the mother, or other member of the family, by replies that absolutely had no relation to the question, the apparent intention being to tire and confuse the physician and, if possible, to avoid having a case with suspicious symptoms sent to the morgue. It is a pleasure to note that in many quarters the opposition to sanitation is less bitter, has died out or has even been replaced by a real desire to assist.

The following statistics compiled from morgue records convey an idea of the number of deaths from contagious diseases among children. In this instance, all ages of fifteen and under are counted, and the records since January 1st, 1904, have been used.

Varicella	1 male		1
Bubonic plague	2 males	7 females	9
Asiatic cholera	27 males	33 females	60
Tuberculosis of the lungs	4 males	1 female	5
Leprosy and tuberculosis	3 males		3
Cerebro-spinal meningitis	1 male	1 female	2
Tetanus	1 male		1

Of these one case of cholera occurred in an infant two days old whose mother had died of cholera.

Congenital malformations are probably about as frequent here as elsewhere. Imperforate anus caused two deaths within my observation. One occurred before operation could be performed and another after operation. From a few minutes to a few hours after birth is the usual time of survival of the monstrosities, of which there are more than might be expected. During the past year I have seen three, and it is probable a number were not reported. Of the three mentioned one was a case of "acrania," the parietal bones being absent, but the brain being present. This specimen is now in the laboratory. The family stated that the mother was in the habit of visiting the Botanical Gardens, and took an especial interest in the large blue heron or crane. As we do not know all about maternal impressions as yet, this statement is at least worthy of a passing thought. The second case was one of "ethmocephalia," the eyes being close together, and the nose consisting of a cutaneous tag hanging over a rudimentary orifice. The third case was reported by Dr. J. W. Smith and is, I believe, more rare in occurrence, being of the variety called "terata catadidma, duplicitas anterior," with an almost complete duplication of the head. Of these cases the first and last lived but a few minutes, the second lived seven and one-half hours. To-day I heard of another case of Dr. Smith's in which there was inclusion of the left arm and upper two-thirds of the forearm, and at the same time eventration of the intestines.

It is impossible to say how many children die of internal congenital malformations, but it is probably so small a number as to make it of minor import.

The following is a list of diagnoses which do not appear as often as I think they should: Asphyxia, congenital debility, tuberculosis of the lungs, pneumonia, rachitis, cerebro-spinal-meningitis, tubercular meningitis, influenza and membranous laryngitis. A series of autopsies would probably show more cases of tuberculosis, more lobar pneumonia, more cerebro-spinal-meningitis and more tubercular peritonitis. Some undetermined cases may be due to meningeal hemorrhage due to traumas during labor. Some cases of infection in infants two days old are undoubtedly due to small abrasions received during delivery. Some diseases that will bear further investigation as to their degree of prevalence are malaria, acute dysentery, amebiasis, pertussis, scarlet fever and typhoid fever. Convulsions of children is probably a correct diagnosis in a certain proportion of the so-called cases (because there is no demonstrable underlying cause). A large number of the cases, however, are really enteritis due to improper food, unsanitary surroundings and exposure. In other cases the convulsions are only a symptom of the disease which is unrecognized.

ANTI-BACTERIAL SERA.

BY ORVILLE HARRY BROWN, Ph. D., M. D., St. Louis, Mo.

In an examination of the Wisconsin Medical State Board was the following question in *Materia Medica and Therapeutics*: "Give source, composition and therapeutics of the following antitoxins as they are now known: Antidiphtheric serum, tetanus antitoxin, antitoxin of bubonic plague, antistreptococcus, antipneumococcus, antituberculosis and antianthrax serum."

The question is a good one. The young graduate, or the old one either, who has the knowledge to answer each point of the above deserves credit. I doubt not but that the intention of the examiners was more to stimulate thought along the line of serum therapeutics, than it was to get a perfect answer. The parts on antidiphtheric serum, and tetanus antitoxin, were, without doubt, uniformly satisfactorily answered, because the scientific facts concerning these questions are accessible to medical students. But how can the other parts of the question be answered satisfactorily when there is such a chaos of opinion on the topics? Commercialism is running riot on antibacterial sera. Since it was first demonstrated that an antitoxine could be produced, it seemed possible that other or all diseases might have antisera. At any rate, the drug houses, working on this theory, which looked "good," at least from a financial

standpoint, have manufactured antitoxines for a large number of the infections, and have advertised them to the profession, as being curative for the respective diseases. The physician who has a large country practice, and consequently does not have time to read the scientific medical literature, may have been led to believe that antistaphylococcus, or antistreptococcus sera were to abscesses or septicemias what diphtheric antitoxin is to diphtheria. He reasons that drug houses would not manufacture such products and advertise them as beneficial, unless there was some scientific reason which would warrant the procedure.

Some few of our best drug houses employ good chemists, pharmacologists and bacteriologists, and these are the houses, too, which are the slowest to put out such a product. It may be the belief of these firms that antisera, if not of benefit, are not harmful. Is such a supposition warranted? Now, as to the question, "what are these antibacterial sera?" The serum therapy is based upon the theory that when bacterial toxines are vicariously administered to an animal, an increase in the protective substances of this animal's blood is induced. This holds for a few diseases (diphtheria and tetanus), and if it held for all, the antisera therapeutics would doubtless be flourishing today instead of being enveloped in a cloud of doubt.

The investigation of antibacterial serum has been recently undertaken by Sir A. E. Wright and his associates. This has been made possible only since the discovery of the opsonic power of the serum and methods for detecting the same. The opsonic index is ascertained by mixing equal amounts of washed corpuscles, bacterial emulsions and serum, and observing the phagocytic power of the corpuscles. This determines the protective power of the serum. Whether these antibacterial sera increase or decrease the protective power of the serum for the corresponding bacterial infection depends on the antibacterial effect of these agents. Doctor Bulloch¹ found that a certain antistaphylococcus serum was extremely toxic. Professor Wright² demonstrated that antiplague sera lowered the resistance of guinea pigs to plague infections, causing these animals to succumb to the test-inoculations in shorter time than the control animals,—the extent to which death was hastened in each case being directly proportional to the dose administered. It was found that an "antitubercular serum" from a reputable laboratory produced the same sort of a reaction in the opsonic index of a rabbit, as was produced by injections of tuberculin. In view of these experiments, Wright has come to the conclusion that a large number of the antibacterial sera are vaccines in disguise. By vaccines are meant sterilized and standardized solutions of bacterial toxines.

1. Bulloch: Reference from Wright's paper (reference following).

2. Wright: Clinical Journal, May 16, 1906.

To produce antitoxine the toxine is introduced continuously over a long period of time, in definite amounts, into the body of an animal; after some weeks the serum from the animal is obtained. The toxine is still present there in greater or less quantity. The difference between this and Wright's vaccine is that in the former case the bacterial toxine is diluted with an animal serum, and in the latter the toxine is diluted with physiological salt solution. Needless to add, the standardization of the former is less satisfactory.

CONCLUSION.

1. Some of the so-called antistaphylococcus sera, the antiplague sera, antitubercular sera, and doubtless others, are not antitoxines, but on the contrary, are toxines.

2. These antibacterial sera, provided they are administered in the proper dosage and at the proper intervals, may be used in some cases advantageously.

3. Properly made vaccines should be recommended as substitutes for these antibacterial sera which are not antibacterial, but toxic in property.

4. The vaccines (and antibacterial sera?) are most safely administered when controlled by the opsonic index.

Humbolt Building.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

INFLUENCING THE HEART'S ACTION AND THE BLOOD PRESSURE THROUGH SENSITIVE AREAS.—Rumpf (*Muench. Med. Woch.*, No. 4, 1907) confirms the observations of Mannhopff, who showed that the heart's action could be influenced through pressure on and manipulation of sensitive areas. Mannhopff showed that a pulse of 84 could be increased to 120 through such a procedure. The author finds, however, that other phenomena are quite as characteristic. (1) The heart's action may be increased; (2) there may be a short slowing down of the pulse followed by an increased activity; (3) the pulse may become small; (4) and it may become irregular.

The author advises against the application of this test in one's office. The patient should be in bed, preferably in the hospital, in order that the cardiac action should be uninfluenced by any external influences. The heart's action must be regular, uninfluenced by the examination itself, and the patient must breathe quietly and regularly. When under these conditions the heart's action is influenced through pressure on a certain area, it is an indication that this spot is exquisitely sensitive and that the heart is easily excited. The sign is especially valuable in cases in which malingering is suspected, in damage suits, etc.

INSTRUMENTAL EXAMINATION OF THE RECTUM.—Tuttle (*American Medicine*, Jan., 1907).—Tuttle shows the advantages of the pneumatic proctoscope and sigmoidoscope, giving some practical suggestions in technic for its employment in diagnosis. He has also used the instrument in treating palliatively, inoperable carcinoma of the rectum, believing that scraping out and cauterizing the growth gives as much relief as an artificial anus without the unpleasant features. The growth may even be retarded by this method and life prolonged; and it is surely to be preferred to the most perfect inguinal colostomy.

THERAPY OF DIABETIC PHTHISIS.—Thorspecken (*Munchen. Medizin. Woch.*, Feb. 12, 1907).—The usual tendency when a case of phthisis develops upon the base of an established diabetes is immediately to place the tuberculous process foremost in point of therapeutic efforts, allowing the diabetes to take care of itself, as it were. Since, however, the phthisis has in most cases, arisen only on account of the lessened vitality of the tissues dependent upon the diabetic process, as is evidenced by its late development without previous dyscrasia, it would be altogether more logical to direct our therapy first at the diabetes, in order to increase

the tissue resistance, the lack of which has allowed the development of tuberculosis. Instead, therefore, of placing the patients upon a fat producing diet, rich carbohydrates, forced feeding, etc., all directed towards increasing the patient's body weight, it would be more logical to place the patient upon a diet carefully selected as to its carbohydrate content, so as to preserve as perfectly as possible the proper carbohydrate equilibrium. Such a regime would minimize the harmful effects of the diseased metabolism, promoting an increase in tissue resistance. Of course other therapeutic measures,—fresh air, sunlight, exercise, etc.,—need not be neglected. A case is cited, treated according to these principles, which made favorable progress.

URINE SEGREGATION BY MEANS OF KIDNEY MASSAGE.—Cowie (*American Medicine*, Jan., 1907).—A manipulation for diagnosis of renal disease in place of ureteral catheterization is described. It depends upon the observation that products of inflammation are caused to flow down the ureter when the kidney is massaged externally. The bladder was washed with sterile water until the water returned clear. The patient was then turned on the right side and the left kidney massaged vigorously five minutes, having the patient take a deep breath, pressing high up under the ribs and kneading. The bladder again washed and the turbid washings collected in a sterile flask. The manipulation was now repeated on the right side. The bladder again washed and the washings returned practically clear. Tubercle bacilli were easily demonstrated in the washings from the left kidney; none could be found in that from the right. Operation, nephrectomy, left. The entire parenchyma was involved in abscess masses, the pelvis completely filled with granulation.

The author also calls attention to the fact that "the principle that holds true in serous cavities obtains in the urine," namely, that if in the pus obtained from the kidney, the mononuclear cells predominate, tuberculosis is to be suspected and diligent search made for the bacillus.

HEREDITY IN ULCER OF THE STOMACH.—Huber (*Muench. Med. Wochens.*, No. 5, 1907) presents a series of twenty cases of ulcer of the stomach in which he was able to trace similar ailments to antecedents. Heredity has not been considered a factor in ulcer of the stomach, but according to the author's views should be so considered. He reviews the various theories as to the pathogenesis of ulcer and concludes that heredity is at least a factor with which to be reckoned.

NERVOUS MANIFESTATIONS IN CONNECTION WITH THE PASSAGE OF STOMACH CONTENTS INTO THE DUODENUM.—KEHRER (*Muench. Medizin Wochens.*, Feb. 5, 1907).—The author believes that dreams are often incited by the passage of food from the stomach into the duodenum. That some slight disturbance in the normal physiological process occasioned by overeating, or by some organic lesion perhaps of the stomach, gives rise to the oppressive dreams which so greatly disturb certain individuals. The fact that these often occur after an unusually hearty supper, also that they correspond in point of time to about that period in which the

stomach is emptying itself seems to lend some weight to the assertion. As prophylactic measures, he thinks that the patient should take the evening meal early, but should retire late, and that the meal should be moderate in amount, free from alcohol, irritating substances and from those things which require prolonged digestion, so that the stomach will have entirely emptied itself before the person has entered upon his night's rest.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

CLASSIFICATION OF SARCOMATA.—Borst (*Ziegler's Beit. z. Patholog. Anat. Vol. 39, H. 3*).—All interested in the much discussed problem of the classification of tumors called sarcoma, will find Borst's paper a source of valuable information. It is impossible, as the paper is a review given before the Lisbon Congress, to go into a detailed reference to its contents. Of all tumors sarcoma is the one about which the greatest diversity of opinion exists among pathologists. This obtains not only for certain forms of true sarcomata, but especially for the endotheliomata. Borst includes them with the sarcomata. Here the differences of opinion are extremely great. For instance, Ribbert takes a view directly opposite to that of Borst. No new facts are offered in the author's paper, but the representation of the subject is absolutely objective and so complete and impartial in its consideration of all phases of the problem, that it must be consulted by any pathologist dealing with the problem and trying to put it on a firm basis biologically. Borst's review is a brilliant guide to the way further studies must take.

ABOUT THE FORMATION OF METASTASES IN TRANSPLANTED SARCOMATA OF MICE.—Haaland (*Berl. Klin. Woch.*, 1906).—For the study of this problem Haaland used one of Ehrlich's mouse sarcomata. He obtained in twenty-three inoculated mice dying spontaneously from the growth, fourteen animals, or 60 per cent. that exhibited microscopically metastases in the lungs. Only two times the metastases could macroscopically be seen. The tumors that produced the metastases varied in age from fourteen to forty days from the day of inoculation. It was found that in the beginning the secondary tumors represent small embolic foci in the small arterial branches of the lungs. Usually the latter are filled with rapidly proliferating (many mitoses) cells. As has been observed in carcinoma, here also such foci are found, that are surrounded by polynuclear and mononuclear cells that gradually undergo retrogressive changes. Most of the emboli found, however, are well preserved and grow. They perforate the wall of the vessel and grow as a sheath along the wall of the artery or penetrate into the alveolar septa and from there into the lumina of the alveoli. In this way larger tumor nodules are formed in which the original structures are altogether destroyed. Here, too, the elastic fibers

of the septa remain intact for a long time so that the primary structure can still be recognized. In later stages a very interesting observation was made, the appearance of fine fibrillæ between the single tumor elements. The author insists that they are the products of the tumor cells themselves. The lung tissue remains comparatively passive and does not react on the invasion of the malignant cells, except in some places at the periphery of larger nodules where some moderate proliferation and round-cell infiltration can be found. Of other organs Haaland discovered metastatic growths only in lymph glands and in the liver, although a systematic search throughout the body was not made.

ABOUT THE INFLUENCE OF ASSIMILATION—PRODUCTS ON THE GROWTH OF BACTERIA.—Rahn (*Centralbl. f. Bacter., Vol. 16, Orig. No. 14-21*).—The author assumes from the fact that bacteria divide into two cells identical with each other, that each bacterial cell, until the time of division, produces the same quantity of assimilation products, and by geometrical series calculates the critical concentration, that is, the concentration of assimilatory products that stops the growth of bacteria.

Immediately after the inoculation into new nutrient material there occurs a retardation of growth of the transplanted bacteria that persists for a shorter or longer period; only after some time does multiplication begin, gradually increases, reaches a maximum and then subsides again. Experiments showed that this retardation is diminished with an increase in the number of the transplanted bacteria. The age of the inoculated material alone does not explain the retardation of growth; it is the same, with the assumption, uttered by others, that it is necessary for the proteid substances of the medium to be acted upon by fermentative substances secreted by the bacteria before they can be utilized by the latter as food. Opposed to this is the observation that fluid media in which bacteria have grown, when filtered through porcelain filters, serve very well again as media. Even bouillon, in which the growth has continued for six days, when freed from bacteria, allows freshly inoculated material to abundantly grow and multiply.

This shows that the accumulation of assimilatory products cannot be the cause for the ceasing of the growth and death of the bacteria; it was furthermore established that the primary retardation of growth was not the consequence of the greater richness in oxygen of a new and fresh medium. Experiments with old bouillon in which the bacteria were killed by the heat, showed that the greatest rapidity of multiplication, or the shortest life of a generation, occurs with the presence of a certain concentration of a substance that does not pass a porcelain filter. This substance is produced by the bacteria themselves. In the same bouillon, inoculation of bacteria can be repeated six and more times after killing the bacteria each time by heat. It follows from this that the substance inhibiting, or retarding the growth, is destroyed by a high temperature and that not all of the assimilatory products are concerned in this phenomenon. It is not interfered with by the action of ether, but does not pass the porcelain filter, being absorbed in its pores. Rahn's work has brought light on a problem that has been much discussed, but so far has baffled explanation. While the

experiments were made on non-pathogenic bacteria, the study of pathogenic forms in this direction may lead to important results as to their behavior in the animal body during the commencing and subsiding period of infection.

INVESTIGATIONS ON SYPHILIS IN MONKEYS.—Finger & Landsteiner (*Sitz. ber. d. Kuis. Akad. d. Wissensch. Wein.*, Vol. 114 Abth. 3).—The highly important work about which preliminary reports have been published for some time, at last lies before us in a complete form. Finger and Landsteiner, in using a great number of monkeys, belonging to the genera cynocephalus and macacus, have in their inoculation experiments almost always met with success. Like Metschnikoff and Roux and Neisser and Lassar, they consider the lesions and phenomena produced as syphilitic. As proof of this they demonstrate the existence of a period of incubation, the transmissibility from one monkey to the other, the immunity produced by the inoculation and the constant pathologic identity of the lesions produced with those observed in human lues. Last, but not least, the great frequency with which even in lower monkeys positive results are obtained, is convincing. They maintain that even they can be utilized with advantage for the demonstration of the presence of syphilitic virus. It is necessary to use for inoculation copious material and to introduce it into pockets under the skin, or in deep scarifications. The most favorable location for the inoculations are the eyelids and eyebrows. The local effect at first is simply a redness, or the formation of small red nodules that later result in sharply defined, reddish or yellow erosions, sometimes extending over the whole eyelid. After varying times, up to several weeks, retrogressive changes take place, the redness disappears, desquamation sets in and finally scar formation. There obtains a certain degree of infiltration around these lesions but never a definite induration. Often the site of the lesion is marked by pigmentation. The authors have in none of the animals experimented upon observed hematogenic dissemination of the virus, that is, distinct secondary phenomena. In some of the animals there was observed around the local primary effects, infiltration of serpiginous character around the scar that very much resembled certain processes in man. The inoculation from animal to animal succeeded in all cases. Sometimes the series was carried to the sixth generation without any apparent change in the character of the effects, indicating an attenuation of the virus. Even the effect of the virus from one genus of monkeys into another genus did not differ from that produced by the human virus. Investigations to establish immunity by preliminary injection of living or dead virus have not resulted in definite conclusions. They, however, succeeded in one experiment in producing infection by inoculation of material from a gumma.

In another publication (*Arch. f. Dermatol. & Syph.*, Vol. 81) the authors report about inoculations with different forms of virus. That from lymphatic glands shows that the latter always contain a copious quantity of the virus and that it is present not only in the regional glands, but also in glands far distant from the primary lesion. The blood in syphilis has infectious qualities only at certain times. Milk always proved

free from virus. It was found that the sperma of syphilitic individuals can contain the virus even in the absence of specific changes in the testicles. Of great interest are the attempts to gain knowledge of the immunity in syphilis. Inoculations in monkeys after a previous first infection seem to show that even for a longer time after the first infection it is possible to infect anew. It is shown thus, that at the time of the appearance of the primary lesion the monkey has not yet acquired a complete immunity. It could, however, be observed that the presence of the first infection modifies the second to a smaller or a greater degree. Other observations demonstrated that syphilitic individuals, even at the stage of secondary phenomena, are not completely immune, as they can be shown to react locally with specific reactions on the introduction of another virus. The authors explain the symptoms of the tertiary stage by a change of reaction of the partly immunized organism towards the syphilitic virus or its products. As we have learned that in all tertiary lesions the virus is present, it is permissible to assume that a change and more powerful reaction of the organism in late syphilis towards the virus exists, that certainly in tertiary lesions is present only in small amounts. For the pathogenesis of tertiary lesions, therefore, it appears that light begins to dawn and that we will soon have more exact knowledge of their mysterious behavior. [Virus here means spirochaete pallida. Ed.]

DIAGNOSIS.

IN CHARGE OF

ALBERT E. TAUSSIG M. D.

SUGAR TESTS.—Kellas and Wethered (*Lancet*, Oct. 20, 27, 1906).—As the result of extensive experimentation, the writers have found that a number of normal constituents of urine, especially Kreatinin, interfere with Fehling's test for glucose. If the urine has a high specific gravity, it should be diluted until the latter is less than 1015. The urine so diluted should then be mixed with equal quantities of Fehling's solution and boiled for a few seconds. It is then set aside, and if, on standing 2 minutes no reduction has taken place, the presence of pathologic amounts of sugar may be excluded. Longer boiling should be avoided, as otherwise the urates, if present in considerable amount, may simulate sugar. The phenyl-hydrazin test is absolutely trustworthy, only if the crystals thereby obtained are examined microscopically and their melting point determined. The writers have found the safranin test very simple and entirely satisfactory. It is not subject to any of the usual sources of error. An aqueous solution, 1 to 1000, of safranin, is used. Equal parts of this, of 4 per cent. sodium hydrate solution and of urine are mixed together and boiled. If glucose be present, the solution previously red, turns yellow. A quantitative estimation of the sugar can be made if, while boiling, more of the safranin solution is added, until the red color no longer disappears. If 2 c.c. of urine are used, each 2 c.c. of safranin solution corresponds to 0.1 per cent. of sugar. The mixture must not be shaken while the test is being made.

METHODS OF REINFORCING THE KNEE-JERK.—O. Rosenbach (*Muench. Med. Wochenschr.*, 1907, No. 2).—A good method of reinforcing the knee-jerk is that advocated by Kroenig last year. At the word of command, the patient is made to look up towards the ceiling and to take a deep breath. An instant later, the patella is tested. The writer has, for some time, used the following method: The patient is handed a large book or newspaper, and, after the legs have been crossed, is told to read aloud as fast as possible. The size of the paper or book prevents his seeing what the clinician is doing, and the rapid reading completely withdraws his attention from his legs. The best method of all is that of Guttmann. It may be used even with comatose patients, and the writer believes that the knee-jerk should never be pronounced negative until this method has been tried. The patient lies on his back, the leg is suspended by means of a towel, and the thigh drawn obliquely upward by means of another towel, so that there is an obtuse angle at the knee. In this position, the patellar reflex can readily be tested. Its only disadvantage is that it requires the presence of an assistant. The duties of the latter are, however, of the simplest character.

IODOPHILIA IN SCARLATINA.—Neutra (*Zeitschr. f. Heilk.*, 1906, No. II).—If normal blood be treated with iodine fumes, or with a mucilaginous Lugol's solution, the leucocytes are but little affected: In certain pathologic conditions, however, the iodine stains their protoplasm yellowish-red or brown, the nuclei remaining paler. This reaction, the writer believes, is constantly and intensely present in scarlet fever. If it is absent in the entire course of a febrile affection, this fact speaks against the diagnosis of scarlatina. If, in addition to an iodophilia, there is an increase in the proportion of eosinophils, the diagnosis of scarlatina is nearly-certain. A rapid disappearance of the iodophilia has a favorable prognostic significance. On the other hand, if these iodophilic cells are constantly present in excessive numbers, the reverse is true.

THE COLOR INDEX OF THE RED BLOOD CORPUSCLES.—Tuerk (*Muench. Med. Wochenschr.* 1907, No. 5).—The diagnosis of many varieties of anemia is in great part based upon the color index. The accuracy of the determination of this factor depends primarily upon the accuracy of the hemoglobinometer used. Not only, however, do most instruments fail to register 100 per cent. for normal blood with 5,000,000 corpuscles, but the error of observation is always considerable, especially if the observer is not exceptionally expert. The hemoglobinometer should therefore be independently calibrated and diagnostic importance should be attached only to great divergence of the color index from the normal. A well stained specimen of blood gives in general a very trustworthy notion of the color index, and the latter should be considered abnormal only if this finding is confirmed by the appearance of the stained red corpuscles.

THE DIAGNOSTIC SIGNIFICANCE OF THE HYPERACID GASTRIC CONTENTS.—Rubow (*Hospitaltid*), 1906, No. 43; *Muench. Med. Wochenschr.*, 1907, No. 5).—Hyperacidity of the gastric contents can be produced in two ways, either through a simple hypermotility or through an actually excessive secretion of hydrochloric acid. In both cases the gastric contents are hyperacid, but in the former only a small amount of contents can be obtained, whereas in the latter the quantity is abnormally large. The latter alone points to the existence of a gastric ulcer.

A SIMPLIFICATION OF HELLER'S TEST FOR ALBUMIN.—Sachs (*Deutsch. Med. Wochenschr.*, 1907, No. 2).—A drop of nitric acid is placed upon a clean, glass slide lying on a dark surface. In its immediate vicinity is placed a drop of urine. As the two drops come into contact a white cloud appears, immediately, if the urine is rich in albumin, after a short interval if the albumin is present only in traces. A positive reaction may still be obtained with 0.01 per cent. albumin. A decided objection to the use of this method lies in the fact that the presence of a considerable amount of urates will often lead to the false assumption of albuminuria.

SALOMON'S TEST IN GASTRIC CANCER.—Schupfer (*Gazz. d. osped.*, 1906 No. 150).—Salomon's test consists in the production of an opalescence when Esbach's reagent is added to the fasting stomach contents. According to the writer's observation, is but very rarely positive in conditions, other than gastric cancer, and possesses considerable diagnostic significance.

A MODIFICATION OF GUENZBURG'S TEST.—Steensma, (*Tijdsch. vor. Geneesk.*, 1907, No. 3; *Deutsch. Med. Wochenschr.*, 1907, No. 6).—In the phloroglucin-vanillin test for free hydrochloric acid, S. replaces the phloroglucin by means of phloridzin. Otherwise the test is done in the usual manner. He believes that his modification renders the reaction more delicate and more distinct.

NEUROSIS SIMULATING GALL-STONE COLIC.—Ewald (*Therap. d. Gegenw.*, 1906, No. 3).—Ewald reports the following instructive case: A woman, 30 years old, had suffered for a long time with extremely severe attacks of pain in the hepatic region, which resisted all treatment, so that she had become a victim of morphinism. There was circumscribed tenderness in the region of the gall-bladder. At the operation, however, all the abdominal viscera were found normal. The pain continued for 9 days after the operation, and then gradually disappeared, apparently permanently. The pain and tenderness evidently were of purely nervous origin, and the possibility of such an occurrence should not be ignored in making the diagnosis of gall-stones.

THERAPEUTICS.

IN CHARGE OF
WILLIAM ENGELBACH, M. D.

REPORT ON THE TRYPSIN TREATMENT OF CANCER.—Graves (*Boston Med. and Surg. J.*, January 31, 1907.)—Graves reports in detail on four cases of recurrent cancer of the breast upon which he used injections of trypsin. He began by injecting ten mm. of the undiluted trypsin solution, and after two or three treatments increased this to 40 mm. three times each week. He says that this dose may be increased to 60 mm., or more, if the injections are given in divided doses and in different areas. The amount of injection and the frequency of treatment must be determined by the amount and severity of the local constitutional reactions. His conclusions from these cases are as follows:

First. A discreet cancerous node systematically attacked by injections of trypsin shrinks and becomes hard and fibrous, or disappears.

Second. Neighboring nodes are little, if at all, affected, and are probably influenced only when the trypsin comes into actual contact with the growing cells.

Third. The treatment of a given node, causing it to shrink, or disappear, does not prevent the appearance later of another node in immediate proximity to it.

Fourth. There is no evidence in these cases to show that trypsin affects cancer cells by circulating in the blood, or that it affects them in any way excepting by direct contact.

Fifth. The internal administration of the various ferments of the pancreas is of benefit to cachectic patients; but from my experience there is nothing to show that this benefit is due to anything else than the assistance given to the intestinal digestive secretions of the individual patient.

Sixth. The direct action of trypsin on growing cancer cells, as shown clinically and microscopically, is sufficient warrant to continue the treatment in inoperable cases, especially in view of the fact that there are apparently no serious results that can occur from its use.

ICHTHYOL AND ITS THERAPEUTIC VALUE.—Kegel (*Merck's Arch.*, February, 1907.)—The author gives the therapeutic action of ichthyol as that of abstracting oxygen from the tissues, thereby producing a marked diminution of any inflammation or local congestion. It contracts and granulates wounds perfectly, and has the power of penetrating unbroken skin. Unna introduced it first as a therapeutic agent in skin disease. The author has used it with good results in chronic articular rheumatism. For this disease he applies it as a 25 per cent ichthyol ointment and gives it internally in the form of a pill, capsule or in water from 3 to 10 m. three times a day. It has been recommended in lumbago, muscular rheumatism, rheumatic or gouty joint disease, and almost every form of subacute or chronic gout by Wood and Schweniger. Hare speaks favorably of its action on chronic articular rheumatism in the form of so-

dium and lithium, sulpho-ichthyolate in 10 to 30 grain doses in capsules, In erysipelas, eczema, psoriasis, acne, prurigo, herpes zoster, lupus, urticaria, burns and varicose ulcers it has been found to be of special value (Klatz, Nussbaum, Jamieson, Allen, Elliott, Unna, etc.) Lately it has come into use as a treatment for tuberculosis. The author and others (Rosenburg, Burnet), report favorably regarding its action in this disease. Furunculosis of the external auditory canal, anal-fissure, cervical endo-metritis, vaginitis, chronic inflammation of the uterus and adnexa are among the conditions which call for its exhibition. The addition of a little oil of citronella to ichthyol ointment robs it of its disagreeable odor.

THE USE OF ALCOHOL IN OBSTETRIC AND GYNECOLOGIC PRACTICE.—Theilhaber (*Munch. Med. Wochenschr.*, Jan. 33, 1907.)—The author writes emphatically against the use of alcohol for almost any purpose either in gynecology or obstetrics. He says it is absolutely contraindicated during pregnancy on account of its deleterious effects on both mother and child. It is not indicated during the puerperium or lactation. He thinks it especially harmful when given to young girls for menstrual disturbances, and shows that it increases the symptoms during the menopause.

PNEUMONIA IN CHILDREN. ITS SUCCESSFUL MANAGEMENT BY HYDRIATRIC MEASURES.—Worster (*Med. Rec.* Feb. 16, 1907.)—The author gives the detailed treatment of pneumonia in children with cold baths, illustrating the same with the records of a case. The good effect of this treatment, he explains by the cold applied to the peripheral nerve producing a shock which is conveyed to the central nervous system. This, in turn, sends out reflex stimulus to the nerve centers which govern respiration, circulation, digestion, tissue building and excretion. He says the mere lowering of the temperature is a secondary consideration. The temperature, however, is reduced, respiration deepened, cardiac action improved, and the pulse slowed and rendered less dicrotic. His method is as follows: In the early stages of pneumonia full baths, beginning when a temperature of 102.5 degrees is reached, are given every four hours. The temperature of the first bath is 95 degrees. This is lowered two degrees for each bath until it reaches 80 degrees. The temperature of the bath should not be reduced below 80 degrees, and the effects should be closely watched. During the bath vigorous friction of the body should be applied. If dyspnea, somnolence, stupor and delirium occur the child is held in water at 100 degrees enough to cover its hips for five minutes; then several basins of water at 70 degrees having been prepared and in readiness, are poured upon its shoulders. This can be repeated every two hours if necessary. This procedure is called "affusion," and should be used when any head symptoms make their appearance. Each bath generally reduces the temperature two degrees, and though it rises again, it is generally not so high. The baths are repeated until the temperature is finally reduced to normal and remains there. His report on this method of treatment is very favorable.

TREATMENT OF DELIRIUM TREMENS.—Ganser (*Munch. Med. Wochenschr.*, January 15, 1907).—The author in writing on this subject condemns the treatment of this condition with chloral, paraldehyde, hyoscyamus, hyacine and other nerve sedatives. His experience with 1,051 cases is given as follows: During the first 8 years of 486 cases he had 31 deaths, or a mortality of 6.37 per cent. During the following eight years out of 565 cases he had 5 deaths, or a mortality of .88 per cent. The marked difference in his mortality he attributes to his treatment carried on during the latter eight years. This consists of abstinence completely from giving sedative treatment; complete withdrawal of alcohol; and giving digitalis, in large enough doses to produce its physiological effect. Besides this, he gives stimulation in the form of camphorated oil hypodermically. In especially bad cases tablespoon doses of ice cold champagne is given every half hour. In order to increase the elimination he gives a solution composed of one per cent sodium acetate in water mixed with a small amount of simple syrup. This has a cooling, palatable taste and on account of its yellow color is frequently mistaken for beer by the patients. The digitalis is given by the rectum in those cases in which it cannot be given by mouth. He considers it the most important part of the treatment, being especially indicated because death, when it does occur, is the result of cardiac insufficiency.

NERVOUS BELCHING.—Adler (*Munch. Med. Wochenschr.*, Jan. 22, 1907).—The author agrees with well known authorities that eructation-nervosa is caused by the swallowing of air. The treatment for this condition he gives is (1) general anti-nervous therapy, especially suggestion and psychotherapy; (2) he considers the method recommended by Bonveret and later by Laube, of holding the mouth open, as one of the best means to prevent these paroxysms; (3) when this is not applicable, *i. e.*, when they occur during eating, he gives tincture of iodine and other local vesicants.

RESULTS OF INTRATRACHEAL THERAPY IN PULMONARY TUBERCULOSIS.—Mendel (*Revue de Therapeutique Medico-Chirurgicale*, 1. Jan. 1907, ab. *Munch. Med. Wochenschr.*, February, 1907).—From a series of 200 cases upon which the author used injections of 3 ccm. of a 10 per cent oil of eucalyptus into the trachea he draws the following favorable report: The injections caused no bad results, and even produced no uncomfortable reflexes. They were used in a wide variety of chronic tubercular cases, and fever was not considered a contraindication for their use. The author claims that out of 200 cases, 47 per cent were cured, 33 per cent were undoubtedly improved, and 20 per cent. were not markedly affected. Many of the cured cases had remained so years after this treatment.

TREATMENT OF STENOSIS OF THE PYLORIS IN THE NEW BORN BY SPECIAL DIET.—Schitomirsky (*Munch. Med. Wochenschr.*, Jan. 29, 1907).—

The author gives his experience with two cases of stenosis of the pylorus in the new born treated with Biebert's cream dilution. This dilution of cream was given in very small doses at the first and gradually increased

in amount and concentration. The result was very favorable in both of these cases. The author maintains that this treatment should be tried in every case before surgical treatment is considered.

THE ESSENTIAL FACTS REGARDING THE NOURISHMENT OF THE SICK.—RODARI (*Der Arzt als Erzieher*, No. 26).—Rodari says in this extensive monogram that there are two indications to be fulfilled in properly nourishing the sick. First, to provide the proper strength and second, to aid the healing by attacking the disease directly or aiding and assisting the general resistance of the body. With these general principles for a preface he gives a detailed dietetic treatment for the special groups of diseases. The special points that must be considered in regard to the proper assimilation of specialized diet are the following: (1) Condition of the digestive organs; (2) The relations and amount of the constituents of the food; (3) The conditions and functions of the secondary organs of digestion. Articles of the diet are placed in six different groups: (1) Nutriment enemas; (2) Pure liquid diet; (3) Semi-liquid diet; (4) Liquid meat diet; (5) Solid meat diet; (6) Heavy meat diet. These different groups of diet, under which he gives a list of articles containing each, are only for general use. The author claims that special diets must be modified to conform to the requirements of each individual case.

PULMONARY TUBERCULOSIS: ITS CAUSE AND TREATMENT.—BURWINKEL. (*Der Arzt als Erzieher*, No. 2).—In this extensive monogram the author quotes liberally from statistic tables on the many inter-current causes of tuberculosis. He gives the records of results of preventative treatment of this disease in the different countries. The active treatment recommended in this treatise consists almost entirely of the recognized hygienic and dietetic therapy of the present time. Drugs and productions of active immunity by means of tuberculin is not considered well enough established to be put into general use.

THE CARE OF THE SKIN AND COSMETICS.—MICHEL (*Der Arzt als Erzieher*, No. 7).—This complete monogram includes both the physiology and pathology of the skin. The hygienic and other recognized treatment of ordinary skin lesions are given in detail.

THE ENGLISH DISEASE (RICKETS) AND ITS TREATMENT.—GOEBEL (*Der Arzt als Erzieher*, No. 26).—The author writes extensively in this article compiling the late development on the etiology and extension of rickets. The symptoms, signs and the newer developments as a clinical condition are dwelt upon. The different methods of therapy with their physiological basis are given in detail.

SURGERY.

IN CHARGE OF

MALVERN B. CLOPTON, M. D.

DISLOCATION OF CERVICAL VERTEBRÆ, SEVERANCE OF CORD, PARTIAL RESTORATION OF FUNCTION.—Krauss (*Ann. of Surg.*, Nov., 1906).—The case history is of a youth who, after diving in shallow water, became semi-unconscious and devoid of power over his arms and legs, who had a dislocation of the sixth cervical vertebra that was reduced immediately. Sensation and power and all reflexes were entirely lost below the point of dislocation, and after six days bed sores rapidly developed; priapism and loss of control over feces persisted, and as the patient was rapidly failing, operation was consented to on the eighteenth day. There was no displacement of the vertebræ, and only a small remnant of old clot within the dura, but the cord was "flattened, ribbon-like and shrunk." The wound was closed, nothing but the relief of the intraspinal tension being accomplished, and the severed cord left as it was. Slowly the reflexes returned, the priapism disappeared, and he gained a sphincteric control; then power returned in arms and legs, so that eight months later he could stand alone for a few minutes, walk with support of chair, sensation becoming nearly normal. It is thought that regeneration of the spinal cord followed the operation, accompanied by a descending degeneration of the cord. Notice is taken of the Stewart-Harte case, also Fowler's case, where regeneration followed a complete severance of the cord at the tenth dorsal segment, the cord suture being performed ten days after the injury. The author believes that however severe the lesion, surgical measures should be resorted to as soon as possible, even if there is complete severance of the cord.

APPENDICITIS IN THE NEGRO.—Royster (*Mobile M. & S. J.*, Jan. 1907).—The general impression is that there is a racial immunity, but the author opposes this with his own and others' statistics. He has removed the appendix from negroes 53 times, 14 of them being primary appendicitis cases, the other pathologic appendices being met with in abdominal conditions. He believes that the disease is on the increase amongst the negroes, and that civilization and dietetics are responsible, as it is, according to Senn, an unknown disease in the negro hospital at Mozambique.

SEQUESTRATION ANEMIA IN BRAIN AND SKULL SURGERY.—Dawborn (*Annals of Surgery*, Feb., 1907).—To avoid hemorrhage in operations about the head and neck, blood is accumulated in the extremities, even a quart or more, and retained there by tourniquet until the operation is completed, and then allowed to return to the circulation. The constriction is applied about the thighs so as to nearly stop the venous flow, but not the arterial current. In five or ten minutes the limbs grow dusky in color and swell, the tension of the pulse at the wrist is lessened, and becomes

soft. The limb, or both limbs, are wrapped in cotton, and the operation proceeds, much less anesthetic being necessary than when this sequestration is not practiced. Should the patient show evidence of loss of blood, or shock, the tourniquet could be loosened and quarts of blood returned to the circulation immediately. It is best for the heart to release the imprisoned blood slowly. Six cranial operations are reported where, with this method there was practically no bleeding and no shock. The advantages claimed are: The reduction in the amount of anesthetics, consequently less vomiting subsequently, and less danger of hernia cerebri. Ease of control of hemorrhage during operation. Shortened operation because of dryer field. Lowered intracranial pressure, consequently increased depth and frequency of breathing, less danger of death from sudden pressure on respiratory center in tumor cases, and more space between brain and brain-case, making it easier to remove clots and to separate adhesions. Atheroma, septic blood conditions, recent typhoid fever and diseases inducing rapid blood coagulation, or any condition predisposing to atheroma, are counterindications for the practice of sequestration.

CONSERVATISM IN HARELIP AND CLEFT PALATE IN INFANTS.—Brown (*J. A. M. A.*, Mch. 2, 1907).—The stand is taken against the more radical operators who advise the palate operation at the earliest date, the lip to be fixed subsequently. In these early operations the author believes the mortality greater, the subsequent deformity more marked and the speech no better than in later operation. After birth an adhesive strip is used to hold the lip together, and prevent further muscular pull; feeding is instituted with a bottle. The operation on the lip is deferred until the third or fourth week, if the child at that time is showing nutritional improvement, or it may be necessary to wait until the fourth month. The hard plate is closed between the first and second year. The soft palate is not closed until later. If the palate fissure is of unusual width mechanical measures are used to give better form before operative closure is attempted. Special attention is given to having the alimentary tract in good condition both before and after the various steps of the operation, and if there is much hemorrhage salt solution is given to replace the loss.

FRACTURE OF THE BASE OF SKULL.—Crandon and Wilson (*Annals of Surgery* Dec., 1906).—In the last 42 years there were 530 cases of fracture of the base of the skull treated at the Boston City Hospital, which were one-third of all the fractured skulls admitted, and of these basal fractures over one-half recovered. Intoxication with alcohol in a third of the cases led to a frequent development of delirium tremens, which could not be wholly differentiated from meningitis or laceration of the brain. Consciousness was lost in less than one-half, and is not judged in itself a measure of danger if it is primary, but if a free interval supervenes before unconsciousness comes on, it is of serious significance, continuous hemorrhage, cerebral edema, or inflammation being feared. Bleeding from some orifice was present in 74 per cent. of the cases, most

frequently coming from only one opening; from two openings much less frequently, and, in order of frequency, from one ear, nose, subconjunctival, two ears, mouth. Bleeding from one ear is pathognomonic of fracture, and is usually due to a ruptured drum, while subconjunctival blood is least reliable as a guiding symptom. Of the temperature, the authors remark that the persistent depression measures the danger from primary shock, and its rapid rise later gauges the severity of the meningeal or cerebral lesion. It was most uncommon to have the escape of cerebrospinal fluid noted in these histories. Loss of motility of the pupils is regarded as more grave than inequality, but little reliability can be placed in this sign. Paralysis of nerves following basal fractures is not frequent. Of the cranial nerves the facial suffers most frequently, but recovers favorably. Skeletal paralysis is occasionally noted, and means a complicated injury usually followed by death. Loss of bladder and rectal control is usually a result of unconsciousness, and of these over one-half died. Operation should be done only in those cases where hemorrhage is the most important feature, as it shows continuous and progressive intracranial compression. Prognosis is usually difficult in those cases, which remain long unconscious, but about one-half of the cases die shortly after the injury from the brain laceration and hemorrhage. The remote after effects have been studied, and in 38 cases inability to work as hard as formerly was the chief cause of complaint, being easily tired and unable to concentrate their mind. Poorer eyesight, dizziness, and deafness, usually in the ear from which the bleeding came, were frequently complained of, and the families noted irritability of the patient. The average of 10 days in the bed and 16 days in the hospital is considered quite too short by the authors, and they recommend rest in bed for at least three weeks, with absolutely quiet surrounding, and give the bone time to heal, and resorption of extravasation time to take place.

CONTRIBUTION TO THE STATISTICS OF MAMMARY CANCER AND ITS CURE. Erick Schen (*Mitt. a. d. Grenzgeb. d. Med. u. Chir. Gedenkbund f. v. Mikulicz*).—The results of the ten years' work, from 1890 to 1900, at Mikulicz's clinic at Breslau are interesting, as they include two periods, that before and that after the complete operation was done. It is shown how important it is to operate radically early, removing both pectorals with their fascias, clearing out the axilla, and the infra, and supraclavicular glands, which has been the method used since 1898. Previously Mikulicz had been relatively conservative, removing the breast and tumor with the pectoral fascia and the axillary glands, only removing the pectoral muscle, or part of it, when there seemed some direct involvement. In the 295 operated cases there were 8 deaths, about equally divided between pneumonia, sepsis, pleurisy and collapse—two of the cases, however, were operated for recurrences. The statistics developed from the case histories of the 320 cases show very little evidence of hereditary influence. The youngest case was 24 years, and the oldest case was 87 years; the most of them, however, were between 50 and 60 years old, and nearly all had nursed their children. There were two male breast cancers. Chronic inflammation was often a forerunner of cancer, being present in 28 cases (7.4 per cent), and trauma was noted in 6 per cent of

the cases. Often a long standing benign tumor becomes malignant. The left breast was most frequently attacked, and the upper and outer quadrant of the gland was the part involved in 43 per cent. This involvement of the upper and outer quadrant was explained on the theory of Schmidt and Stiles, that the tumor originated in an aberrant part of the gland, which is frequently not connected with the main gland, and therefore, a fit nidus for cancer. The types of cancer in the order of their frequency was scirrhus, simplex, medullary and adeno-carcinoma. No definite classification can be made as the types frequently merge into one another. Acinose cancer ulcerate and early form metastases. These cases did not come under observation until quite late, as many of them were of the poor peasant class. Over 50 per cent had the tumor attached to the pectoral fascia, and about a third of the clinical cases had ulcerated. Nineteen months was an average time before the supraclavicular glands were affected, but non-infection of the supraclavicular glands was no guarantee that there were no internal metastases. The liver was found the most frequent seat of the internal growths. The cases are divided into four classes, according to extent of growth, and the results are for all kinds of operation.

1st Class. Those without any glandular involvement. Twenty-nine cases traced; 45 per cent living and well to date.

2d Class. Those with the axillary gland involvement only shown microscopically. Twelve cases traced; 25 per cent. cured.

3d Class. Axillary glands felt, but no other glands. One hundred and fifty-nine cases traced; 18 per cent. cured.

4th Class. Carcinoma spread beyond axillary glands. Thirty-three cases traced; only 1 cured.

Most of the recurrences were local in the scar. Of the 233 cases operated from 1890 to 1900, 20 per cent were living and well in 1905. The cases were also tabulated according to the operation performed. These results show the great advantage of early operation done completely. Inoperable cases, when let alone, lived as long as 25 months, with an average of 7 months. In these cases Fowler's solution was used in large doses. Late recurrences were noted in cases as long as 8, 9 and 11 years after the first operation, the recurrences being mostly in the scar. It is concluded that in early, as well as moderately advanced cases, the chance of recurrence becomes less the more radical the operation. In the more advanced cases (4th Class), it is the exception for any to remain well, but they are greatly benefitted by operation, and this must be done with great care to remove all the very smallest infraclavicular glands, and, if necessary, divide the clavicle as Halsted advised, and get the whole supraclavicular chain as well. The defect of the chest wall, after the complete operation is not objectionable, and the function of the arm is good. Occasionally a lymphstasis, with swelling of the arm, was noted. In this clinic the customary 3-year limit for recording a cure has been completely abandoned, and the above statistics were with 5 years the shortest period.

ORTHOPEDIC SURGERY.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

THE OPERATIVE TREATMENT OF FRACTURES, ESPECIALLY OF THE LONG BONES.—Vaughan (*Amer. Jour. Med. Sci.*, Mar., 1907).—The time has long since passed when the question of operation in the treatment of fractures was not to be considered, unless it were a question of amputation or resection. The x-ray and the advent of aseptic surgery have made it possible to set the fractured ends of long bones so that no shortening or overlapping of fragments may result. In answer to the question, why should we operate on fractures that will get on well without operation, we may say that the object of operative treatment is to prevent deformity of a limb, to prevent loss or impairment of function, to obviate delayed union, or non-union, and to give opportunity for the soft tissues to repair; finally, to get an anatomical result. The author states that, in his opinion, perfect adjustment of the fragments, where the fracture is of a long bone, is seldom accomplished without operation. Measurements are unreliable, in that one-half or three-quarters of an inch mistake may easily be made. By exposing the site of fracture by incision, he has often demonstrated the great difficulty of reducing by extension and counter-extension fractures of the humerus, radius, femur and tibia, in which the ends of the bones overlapped. He does not believe that Buck's extension, or other forms of extension, can fully correct the shortening, though they may diminish it. The intervention of soft tissues, too much motion, or lack of accurate approximation, are the most fruitful causes of delayed union. The dangers of operative treatment are those which are incident to any operation. The anesthetic, the danger of fat embolism, and the extensive detachment of periosteum and infection are principally encountered, but in modern surgery these dangers are not great. The various means used to hold fragments of bone together, such as plates, screws, nails, ivory-pegs, bone-ferrules, animal sutures and wire, each have their special uses. The use of wire is probably the best, in a large majority of cases. It may be used in several ways; as a single loop, as a loop enforced by wrapping, or simply as a wrapping, without drilling; or it may be carried around the fragments in position at two or more corners. Care should be used against the injury of soft parts, in adjusting the wire. The best bone-drill is one with a handle like a gimlet. All hemorrhage having been arrested, the wound should be closed and a plaster of Paris splint applied, with a window, through which the progress of the wound may be observed. The author reports 102 cases of fracture, on which he has operated, and describes in detail the various operations.

DRAINAGE OF THE KNEE-JOINT.—Peck (*Annals of Surg.*, March, 1907).—Septic infection in the knee-joint constitutes one of the most alarming conditions which the surgeon is called upon to meet. The dis-

astrous results both to limb and life render any procedure which can ameliorate its dire results, and minimize the damage which inevitably follows, worthy of serious consideration. Too often it has ended in amputation at or above the middle of the thigh, and not rarely in actual death from sepsis. Flint, in a summary of 62 infections of the knee demanding operation, reports 7 deaths, 4 recoveries following amputation and 2 following resection, and 49 recoveries with disability varying from slight limitation of motion to complete ankylosis. The author described a method of opening the knee-joint which is applicable only to severe cases where the results aimed at are to save life, avoid amputation and secure a useful limb without joint motion. This operation is second in severity only to amputation, and should be reserved for cases in which efforts at drainage and irrigation have failed to check the progress of general sepsis. The operation consists in making a curved incision, which completely divides the patellar ligament, anterior capsule, both crucial and both lateral ligaments, leaving only the posterior ligament intact, and allowing separation of the bone, and opening widely the posterior recesses of the joint. He reports several cases on which this operation was done, and recommends that the operation should not be employed in mild or early cases, but should be reserved for severe cases, where avoidance of amputation or death from sepsis form the sole consideration. The enormous raw surface thus exposed makes dressings exceedingly painful and cleanliness difficult. The limb should be put up in a suitable splint at 45 degrees flexion, and secondary operation should not be performed until suppuration has ceased, requiring, as a rule, a period of from three to eight weeks.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. MCC. JOHNSON, M. D.

SPHINCTERIC CONTROL OF THE MALE BLADDER AND ITS RELATION TO PROSTATECTOMY.—Ball (*The Practitioner*, March, 1907).—Which is the important muscle to avoid injuring in the surgery of the region of the bladder neck and prostate, is a question which has provided a good deal of controversy, different observers getting different results, according to the methods employed. Now that a large number of prostatectomies have been performed, an opportunity has been afforded in man of deciding the question. The result has been that it has generally been accepted that the important muscle is the compressor urethræ muscle, and that, if incontinence is to be certainly avoided, the membranous urethra should be carefully left uninjured.

In order to ascertain the part played by the internal sphincter of the bladder in controlling urination, the author, in experiments upon dogs, cut off the urethra in front of the internal sphincter of the bladder and found that by leaving only this sphincter the dog had control of urina-

tion. He says that it seems quite incorrect to argue, from operations upon patients with enlarged prostates, that the chief sphincter of the bladder normally lies in the membranous urethra.

LIPOMA AND LIPO-SARCOMA OF THE KIDNEY.—Hartwig (*Am. Jour. Urology*, Feb., 1907).—The author reports a very interesting case of lipo-sarcoma, in which the growth was the size of an adult head and weighed 3,5000 grs. After a thorough consideration of the subject, he gives the following conclusions of Selter, which at the present time, are agreed in by most authorities. 1. All known cases of fatty transformation of the kidney show that there is an overgrowth of fat, and not the development of a fatty tumor. 2. This arises from the surrounding capsule, more especially from the small, fat clusters in the hilum. 3. True lipoma only occurs in the renal cortex in the form of small nodules about the size of a cherry stone. 4. These are of a heteroplastic nature, and are not derived from the renal tissue, but from abhorrent fat tissue germs which become enclosed, either during the development or growth of the organ. 5. In none of the cases observed up to the present, have these tumors led to the destruction of the surrounding renal parenchyma.

VESICAL CALCULUS.—Swinburne (*Am. Jour. Urology*, Feb., 1907), —In speaking of "how to get them out," the author says: I think the preponderance of opinion among surgeons, whose work is largely or entirely confined to genito-urinary diseases is in favor of the crushing operation in properly selected cases of vesical calculi, while it is the practice of American surgeons in general to do the suprapubic operation almost exclusively. This is due to the fact that the majority are utterly unfamiliar with the crushing operation, while the majority of those who are familiar with it have not trained themselves to perform it, and look upon the cutting operation as easier and safer. Yet it seems that they do not take into account the marked difference in the length of time of convalescence between the two operations, which is often of great importance to the patient. After the crushing operation, the patient seldom need be detained longer than two days, while with the cutting operation—if performed, when possible, under the ideal condition of completely closing the bladder wound—I doubt whether it is safe to allow the patient to go about under two weeks, and, as ordinarily performed, six weeks is the shortest time to elapse before he can get about.

In the discussion which follows, the views of the author are almost unanimously shared. Dr. Muren mentions that he has done fifteen litholapaxy operations without any anesthetic, the urethræ being tolerant, the main complaint of the patients being during the operation of the evacuating apparatus.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

ON HERPETIC INFLAMMATIONS OF THE GENICULATE GANGLION. A NEW SYNDROME AND ITS COMPLICATIONS.—Hunt (*Journal Nerv. and Ment. Dis.*, No. 2, 1907).—This is one of the most valuable pieces of research work that has appeared during the past year. The paper was read at the last meeting of the American Neurological Society. It is impossible to abstract the paper adequately, therefore, merely an outline will be given. Under the general heading of herpetic inflammation of the geniculate ganglion of the facial nerve, the author has brought together for the first time three separate groups of cases, each group presenting distinct and clearly defined characteristics, but showing various combinations and transition forms. Their union is believed by the author to constitute a new and distinct clinical entity. The pathological groundwork of this affection is identical with that of herpes zoster, of which it forms a part, the distinguishing features of the clinical picture depending entirely upon the ganglion involved, and the nature of the structure surrounding it. A careful review of the anatomy of the ganglia involved is given, as well as the microscopical sections of a case upon which most of the evidence of the author's contention is based. He briefly summarizes his conclusions as follows: The facial, like the trifacial, is a mixed nerve. Its sensory ganglion is the geniculate. The motor root of the geniculate is the facial nerve proper, and its sensory root is the nerve of Wrisberg. This ganglion is of the spinal ganglion type, and, therefore, in common with other ganglia of this type comes within the realm of true herpes zoster. The zoster zone for the geniculate is found in the interior of the auricle, and in the external auditory canal. The pathology underlying the affection is the specific hemorrhagic inflammation of the ganglion as found in zona. As the geniculate is lodged in a narrow, bony canal, and stands in close relation to the seventh and eighth nerves, the characteristic syndrome is produced. The syndrome may be divided into three clinical groups: 1. Herpes zoster auricularis. 2. Herpes zoster in any of the zoster zones of the cephalic extremities with facial palsy. 3. Herpes zoster of the cephalic extremity with facial palsy and auditory symptoms (tinnitus, deafness, vertigo, vomiting, nystagmus and disturbances of equilibrium).

THE PROGNOSTIC IMPORTANCE OF THE ARGYLL-ROBERTSON PHENOMENON.—Pilz (*Monat. f. Psychiat. und. Neurol.*, No. 1, 1907).—This is a valuable paper which has for its object the emphasis of the limitation which is necessary in the prognostic importance of the Argyll-Robertson pupil. It was formerly thought that the existence of this pupil meant that the patient would either develop tabes or dementia paralytica, or a combination of them. The author points out that this pupil may exist, first of all, as the sole reaction of the nervous system to a syphilis,

and that its existence may be one of the temporary evidences of a severe form of neurasthenia. To establish his thesis he collects certain cases which were examined in the clinic, and in which very often a temporary diagnosis of tabes or dementia paralytica was made. A certain number of such cases returned afterward with no evidence of the pupil existing, and certainly with none of the signs of the other two organic diseases present. He insists upon the necessity of the most careful examination of those cases of neurasthenia which present pupil phenomenon of the kind described, and calls attention to the necessity of founding the diagnosis of dementia paralytica in such cases more on a careful analysis of the psychical symptoms than on the existence of the Argyll-Robertson pupil.

THE IMPORTANCE OF THE PSYCHOANALYTIC METHOD OF FREUD.—Sadger (*Centrallbl. für Nervenheilk, und Psychiat.* Jan. 15, 1907).—This is a more or less authoritative account of Freud's method by one of his pupils, who brings out as proof of the correctness of Freud's assumption certain clinical experiences of his own. As is well known, the Freud conception of hysteria has to do with its etiology, and a method of treatment which depends for its effectiveness upon a psychoanalysis of each symptom back to its origin, frequently in early infancy. The foundation for each symptom is found in some sexual trauma. The author of this paper expresses it in this way: "Back of every symptom of hysteria and imperative neurosis is hidden a mass of suppressed sexual desires." In explanation of this idea the author engages in a number of discussions relative to the correctness of Freud's theory, and to the explanation of the attacks that have been made upon it. He shows that much of the criticism directed against the theory is due to the misunderstanding of the writers as to the meaning of Freud's conceptions, and likewise much to the incompleteness with which cases have been studied by means of the psychoanalytic method. One of the chief objections against the theory is based upon the assumption that much of the evidence to be obtained by psychoanalysis is a result of suggestion on the part of the physician. The author of this paper shows conclusively that suggestion, at least, has absolutely nothing to do with the question. The method being in all its phases deductive, the place which suggestion can occupy is difficult to point out. A further criticism directed against the method has to do with the fact that sexual matters in hysteria had better be left out of the question both for the benefit of the patient and for that of the physician. The author shows that such an attitude is entirely unjustified, for the simple reason that medicine deals absolutely with the facts of disease, no matter where found, and no matter what their origin may be. It must be admitted that the author defends the theory from attacks with success, and he shows that the same degree of care has not been shown by the critics of Freud's theory that the study demands, and that, therefore, much of their argument fails for this reason. In the cases quoted in outline, the author attempts to prove the truth of Freud's hypothesis. In this he appears to be less successful than in the other part of his paper. The reason, no doubt is, that in order to make a proof of this kind con-

clusive, the whole of the history of a case must be given, or at any rate, enough of it to permit the reader to form some kind of an independent judgment. After all, whatever attitude one takes toward hysteria a paper of this kind is well worth careful study, especially in view of the recent efforts on the part of Babinski to limit the conception of the disease until it almost ceased to be anything else than a few symptoms to be cured by a little persuasion. It is to be hoped that more of this kind of analysis work will appear from time to time, so that the method may become well enough known to allow of more independent research upon it.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

PRELIMINARY NOTE ON ENUCLEATION OF EYEBALL UNDER LOCAL ANESTHESIA.—Bruns and Robin (*Annals of Ophthalmology* October, 1906).—The following method has been used with success in twenty cases. The mixture used consists of 10 drops of cocain, 10 drops of adrenalin chloride (1-1000) and 20 drops of normal salt solution, making 40 drops containing altogether 2-5 grain of cocain.

Ten drops of the mixture are injected deeply along each rectus muscle, behind the equator of the globe, and after a wait of five minutes, the operation is performed in the usual way.

Pain is experienced, if at all, only during the cutting of the optic and ciliary nerves. The robust and full blooded complain more of pain than the frail and delicate, the pain being compared to that attending the extraction of a tooth. Three cases gave no evidence of suffering during the entire operation.

A few of the advantages of the method over general anesthesia are: The patient is conscious and by that fact stands warder against the awful error of removing the wrong eye. The amount of cocain used (gr. 2-5) is almost insignificant. Finally, patients seem to prefer it.

DIAGNOSTIC EYE FINDINGS IN ARTERIO-SCLEROSIS.—Suker (*Lancet Clinic*, Dec. 22, 1906).—Alterations in the fundus are often the earliest signs of beginning arterio-sclerosis. In well advanced cases, the prognosis as to life may often be made with some accuracy from the fundus appearance.

The author quotes from a recent paper by De Schweinitz, who divides the retinal signs into (1) suggestive, and (2) pathognomonic. The former include uneven caliber and undue tortuosity of the retinal arteries, increased distinctness of the central light streak, an unusually light color of the breadth of the artery and alterations in the course and caliber of the veins. The pathognomonic signs include beading of the arteries, loss of translucency, lesions of the arterial walls in the form of white stripes, indentations of the veins by the stiffened arteries crossing them. Beyond

the point of crossing the veins may show a dilatation. The veins may show evidence of perivasculitis. Edema of the retina in the form of gray opacity around the disk, or following the course of the vessels, and hemorrhages of various kinds, are other signs of importance.

The fundus picture as described is produced by no other condition except the persisting high arterial tension of arterio-sclerosis.

Multiple punctate hemorrhages at the vessel terminals, or between the arms of vascular branches, are suggestive of arterio-sclerosis, especially where there is no evidence of retinal inflammation.

Repeated conjunctival hemorrhages in the middle aged and aged indicate a liability to cerebral hemorrhages, especially when arterio-sclerosis is present. The author states that instillation of adrenalin will cause an apparently straight conjunctival vessel to assume a tortuous contour in beginning arterio-sclerosis. He confirms Lowy's observation that increased pulsation of the fundus vessels upon bending the head well forward on the chest is indicative of cerebral arterio-sclerosis.

Other points alluded to are miliary aneurism of the retina, and a moderate edema of the retina.

THE SURGICAL TREATMENT OF TRACHOMA.—Ryerson (*Annals of Ophthalmology*, October, 1906).—Ryerson advocates Darier's "grattage," which is described as follows: Under general anesthesia, the lower lid is everted by a special form of forceps and scarification is made with a three-bladed knife, so as to divide every granulation. If the lids cannot be completely everted, he cuts the outer angles, a procedure called for in about 30 per cent. of the cases. If the caruncle is much infiltrated it is removed with scissors. The scarifications cause the gelatinous material to escape on the conjunctiva and care must be taken not to allow it to remain on the wound. If necessary curettage is resorted to.

The conjunctival surface is then thoroughly brushed with a hard tooth brush previously moistened with a 1-1500 solution of cyanid of mercury. The rather severe reaction is controlled by iced boric acid, or subacetate of lead compresses.

The successful use of grattage is dependent upon (1) choice of the case, the best result being obtained in the severer forms of papillary granulations, though the sago grain form is also benefited. In old atrophic trachoma, grattage is useless. (2) Thoroughness with which the treatment is carried out. A single granulation may act as a center for reinfection. (3) The operation should be followed by persistent medication.

LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OF

WILLIAM E. SAUER.

THE CURABILITY AND OPERATIVE TREATMENT OF OTITIC PYEMIA.—Zebrowski (*Monatsschr. für Ohrenheilk.*, January 10, 1907).—After discussing the status of these questions, the author gives the complete his-

tory of 6 cases of otitic pyemia, which have recently come under his observation, 4 of which ended in recovery. He concludes as follows: 1. Otitic pyemia does not present a characteristic clinical picture. The cases range from very slight to the severest forms which end in death. The operative methods are to be modified according to the severity of the disease, and pathological anatomical changes found in the temporal bone, and the brain and its coverings at the time of operation. 2. The radical removal of the diseased process in the temporal bone, and the free opening of the lateral sinus often suffices to cope with the pyemic process. 3. The antistreptococcus serum can have a decidedly favorable influence on the post-operative course of an otitic pyemia. 4. The absence of pain about the mastoid in a suppurative inflammation of the middle ear, has no important bearing on the operative indications. 5. The presence of symptoms indicating a thrombosis of the cavernous sinus, must be regarded as a sign which is indicative of a fatal issue. All operative methods proposed for opening the cavernous sinus are impracticable.

THE PRESERVATION OF HEARING.—Bryant (*Med. Rec.*, Mar. 2, 1907.)—The author in a very interesting article calls attention to the advantages of periodical aural examinations, and the benefits which would accrue to the patient through the easy correction of aural defects which, untreated, would become serious or incurable. The layman has not yet learned to practice the same economy of his hearing as he does of his teeth or of his sight; not that he values his hearing less, but simply because the defect is not noticeable to the patient, and his attention is not called to the fact, consequently, a great loss of hearing may be brought about entirely unknown to the individual. The diminution of sound perception may not be noticed until a very large part has been lost. The scheme of prophylaxis would apply to all ear diseases and defects not congenital, among them those originating in the pharynx, nose, tuba auditiva, external auditory meatus, complications of diseases, nervous conditions, trauma, etc. Impairment of the acoustic balance, whether it be due to inflammations affecting the Eustachian tube, or to foreign bodies, impacted cerumen, new growths, etc., affecting the external canal, is especially prone to come on unobserved, and the hearing is seriously affected before the patient notes any change. Early observation will detect these insidious conditions, and judicious treatment cure them before serious impairment has taken place. The author suggests that the otologist should be consulted at least once a year, after each cold, and when anything unfavorable is noticed in the ear.

THE PRESENT STATUS OF TREATMENT OF ACUTE AND CHRONIC SUPPURATION OF THE MIDDLE EAR.—Stucky (*Lancet-Clinic*, March 2, 1907.)—The author states that in every case of pain in the ear, the auditory canal and tympanum should be carefully inspected for the cause, and if there be redness or tension of the drum membrane, the canal should be thoroughly irrigated with normal saline solution and bichloride 1-3000, after which fill with pure alcohol and allow to remain a moment in order to

make more effectual the sterilization. At the earliest possible moment, a free incision should be made from the posterior inferior quadrant along the margin up to and including Shrapnell's membrane, incising about one-third of the entire posterior periphery of the drum. After the incision, dry with sterile cotton, and insert sterile iodoform gauze, filling the meatus with sterile absorbent cotton, changing the dressings when indicated. If the case proceeds to suppuration, irrigate twice daily with warm saline solution and alphozone 1-3000, and protect the canal with cotton. If there is severe mastoid pain, apply dry heat. If the mastoid pain and tenderness increase, with bulging of the posterior superior wall of the canal, and accompanied by temperature, a mastoid operation should be done. In the early cases, endeavor to get out every cell and sew up the wound after having placed a fenestrated rubber tube in the bottom of the wound, allowing it to remain at least 3 days. If suppuration should return, the wound can be opened from below without pain. If the acute suppuration continues, and is abundant in amount, it is evident that more or less of the mastoid area is involved, and after waiting about two weeks without any diminution of the discharge, it is safer to open the mastoid cells. The author concludes by saying, that the discharge of pus from any part of the ear must be regarded as a menace to hearing, health and life of the individual so afflicted.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

M. F. ENGMAN, M. D.

THE OVER-TREATMENT OF SYPHILIS.—Bryce (*Southern Clinic*, March 1, 1907).—The author enters into a discussion of the systemic treatment of syphilis, based upon a long experience in the handling of this disease. He says the great error of the present day in the treatment of syphilis is in overpowering and poisoning the system over long periods with so-called specific remedies. He has seen direful effects from mercurialism and iodism, pushed with good intentions, and he thinks he has seen more harmful effects from this course than would have occurred if the cases had not been treated at all. Because the system for a time tolerates a poisonous dose, it must not be inferred that such active poisons are without ultimate deleterious effects, that will last possibly for a lifetime. Massive doses of iodide of potash will undoubtedly suppress certain symptoms of constitutional syphilis for a time; but they do more—they do this at the expense of cell-integrity, and leave the system a greater sufferer after all. The cases should be treated individually, according to their needs, paying attention to cell-building, elimination by the skin, kidneys, liver and bowels, the general upbuilding of the system and the therapeutic doses of special remedies. Such a procedure will cure a patient more speedily, more certainly and with fewer regrettable accidents than that procedure followed from text-books, which blindly pushes mercury and iodism to their ulterior effects.

THE NATURE OF HERPES SIMPLEX, WITH A CONSIDERATION OF ITS DIAGNOSTIC AND PROGNOSTIC SIGNIFICANCE IN VARIOUS INFECTIOUS DISEASES.—Schanberg (*Jour. of Amer. Med. Assn.*, March 2, 1907).—The author believes there are many features of resemblance between simple herpes and herpes zoster, but there are also strong points of dissimilarity. In extreme cases of herpes, particularly about the face, it is sometimes difficult to distinguish between the zoster and simple forms. The clusters of firm vesicles upon the erythematous base are identical in both. Histologically the lesions in the skin and those in the affected nerve structures are practically the same in the two varieties. Thus far, simple herpes might almost be regarded as a circumscribed, abortive zoster, but there are other differentiating clinical features. The most important is the tendency to recurrence in simple herpes, contrasted with such a rarity of second attacks in herpes zoster as almost to suggest an immunity conferred. Indeed, some attacks of true zoster are no more common than second attacks of measles or scarlet fever. Certain patients are subject to facial herpes, suffering from ten or more attacks a year. In herpes zoster, there is more pain, and the eruption follows in a general way the area of nerve distribution. In elderly patients, the neuralgia may persist for weeks or years after the disappearance of the eruption. After study of these cases, the author arrives at the following conclusions:

“1. Herpes zoster and herpes simplex—both the facial and genital varieties—while not clinically identical, are closely related. The histology of the cutaneous lesions and the observed changes in the nerve structures examined appear in all to be practically the same.

2. It is highly probable that the vast majority of all cases of herpes of the various types are the result of the action of a toxin. This proposition necessarily assumes the infectious origin of herpes.

3. The frequency of herpes simplex in certain infectious diseases and its rarity in others is evidence that the toxin must possess certain peculiar qualities in order to exercise a selective affinity for sensory nerve structures.

4. The toxins producing herpes simplex and herpes zoster are in all probability not the result of the action of any specific micro-organism. This is certainly true of the former, and by analogy may be assumed to be true of the latter disease.

5. The three diseases in which an ‘herpetogenic’ toxin develops with a fair degree of constancy are pneumonia, spotted-fever and malaria. Its frequency in these diseases and its comparative rarity in typhoid fever and many other infectious maladies make its appearance a symptom of considerable diagnostic import.

6. In view of the tendency of certain individuals to recurrent attacks of facial herpes from slight indispositions, the fact of such a history should always be elicited before according to herpetic outbreaks the diagnostic value referred to.”

INTERSTATE MEDICAL JOURNAL.

VOL. XIV.

MAY, 1907.

No. 5.

EDITORIAL.

THE MEDICAL DEPARTMENT OF THE UNITED STATES ARMY.

Although the provision of an adequate medical department for our army has been urged by journals, frequently, during the past two years and, although the present Congress is, apparently, to follow the example of its three predecessors and adjourn without taking any action looking to the betterment of the existing deplorable conditions, the question is one of such importance to the whole country, and to the medical profession especially, that we are moved to bring it up again "lest we forget."

Prior to 1898 the regular army of the United States was, to most of us, a vague, indefinite thing which existed, certainly, but which we thought could never concern us very nearly and of whose personnel and workings we were entirely ignorant. The Spanish war, while small in itself, was vast in its results and one of those results was to give the people at large a better knowledge of the army and a more personal interest in it. With the efficiencies and deficiencies of an army, in which every family had at least an acquaintance, if not a relative, being exploited in the papers constantly; with the publication daily of ever-increasing lists of sick, we learned that everyone of us did have a very deep interest in the army, and especially in its medical department. And many of us condemned unhesitatingly that medical department, not realizing that the preservation of the health of soldiers in the field requires, like every other science, a special training and that the failure of our camps, from a medical standpoint, was due entirely to an inadequate number of trained medical officers.

Since that war we have learned that the fault was with the system and not with the men, and there is not a medical man in the United States to-day but should look with pride on the work accomplished by the army medical corps in the past nine years. The discovery by that corps of the part played by the stegomyia in the transmission of yellow fever is, in its benefits to mankind, on a par with Jenner's discovery of vaccination. And it is only through the efforts of the medical depart-

ment of the army to-day that the building of the Panama canal, that great undertaking which will be of incalculable benefit, not only to the United States but the world at large, is rendered possible.

In spite of the good work of the medical department in times of peace, however, and with the memory, still fresh, of the disasters which, owing to an inadequate organization, befell it during the war, Congress has not only refused to recognize its deficiencies and encourage its good work by giving it a proper organization but has actually placed it in a worse position than it was before the war.

Before the reorganization in 1901, the regular army of the United States consisted of 25,000 men, with a medical corps of 191. Under the reorganization act the army was increased to 100,000 men and the medical corps to 320. In other words, while the army was increased 400 per cent., the medical department was increased only 60 per cent. The result of this of course was that while the number of men in the medical corps was actually increased, the percentage of medical officers to the army as a whole was decidedly decreased, being reduced from .65 to .32 of the authorized strength. Admitting then that the breakdown of the medical department was due to an insufficient number of trained men, the chances of such another breakdown were, by the provisions of this reorganization, just doubled instead of being obviated as they should have been.

In this way a great injustice was done the medical corps but a more blighting injury still was inflicted on it by the manner in which this increase was made. Of the 129 men provided for in the increase, 115 were put in at the lowest grade, thus not only reducing the proportion of medical officers to the army but also greatly reducing the chance of promotion in the corps itself.

It is readily seen that in order to have a steady flow of promotion at such rate as will offer inducements to enter the service, the proportion between the lower and higher grades must be a just one. Promotion in the army presents exactly the same problem as is presented by a crowd of people trying to pass through a gate. If, now, the size of the crowd is suddenly increased and no corresponding increase is made in the size of the gate, it must follow that stagnation will result, and a much longer time be required for the people to pass through. This is the state of affairs in the medical department of the army to-day. The lower grades were markedly increased and the upper grades relatively decreased so that, while formerly it took an officer 18 years to reach the grade of Major and Surgeon, under the present law it will take an average of 28 years, with the chances all in favor of the officer being retired for old age before gaining further promotion.

In former years a position in the medical corps was much sought,

and candidates of a high class were always available. But since the conditions imposed by the reorganization have become known in the various medical centers, the number of applicants has fallen off so that in spite of strenuous efforts and the making of many concessions in regard to literary education, age limit, vision, etc., the department has been unable to secure enough men to fill its ranks. And furthermore, since 1903 there have been seventeen resignations as against one in the three years preceding.

Under existing laws, the inducements offered are not enough to attract ambitious young men of proper medical training, and the medical department of the army is closed as a career to them. To properly prepare himself for the practice of medicine to-day a young man spends more in money, time and labor than ever before and he has a right to expect a reasonable return for his outlay. Medical education like everything else, can not be bought below the market rate. The Government, therefore, in order to get men for its service must either increase its bid or lower the standards of admission and accept an inferior quality. That the latter should be done is unthinkable. It has always been a point of pride with the American people that their soldiers should receive the best of everything and in so important a matter as medical attendance they ought not to tolerate any inferiority.

An adequate medical organization, therefore, is not a question that concerns the army alone, but is one which affects the whole country, and especially the medical profession. We, as medical men, should be particularly zealous in seeing that our representatives in the army are representatives in fact, representing the best in our profession, and we should resent vigorously any effort to cheapen or belittle our profession through its army representatives.

It was a realization that the medical profession as a whole had a vital interest in this matter that led the Surgeon General, in 1904, to consult the profession of the country before presenting to Congress the admirable bill now pending, and whose passage we should endeavor to aid in every way. Through Doctor C. L. Reed, of Cincinnati, Chairman of the Committee on Legislation of the American Medical Association, drafts of several bills were sent to every county medical society and expressions of opinion asked. The bill as finally given to Congress is the one approved by these societies and may be said, therefore, to have the endorsement of the entire profession.

Our efforts should not stop with endorsement, however. It should be an object with each and every one of us to see that this bill, righting an injury and affording recognition of one of the highest professions, beside opening up an attractive career to recent graduates, should be passed. And if the profession makes an earnest effort to bring about

this result, it will be easy of accomplishment. Let each of us do something, therefore, either by letter or personally, to urge our Congressional representatives to action favorable to the passage of A Bill to Increase the Efficiency of the Medical Department of the Army.

THE SURGICAL SHOP.

The tolerance of another's fame indicates an attitude that is informed with appreciation and makes for much in a world where constant bickering seems to be the dominant note of much discordant music. But tolerance can go too far, and when it does, the mental weakness of the adulator and the vaporings and cant of the idol destroy the sincerity of the former and make the latter appear a striding, strutting something whose mental jewels are paste. Carlyle has written much against heroes and hero-worshippers but such is the world that diatribes appear useless when the glamour of any sort of fame is indiscriminately judged by easily-impressed and easily-influenced critics.

The Surgical Shop is about the most modern manifestation of a certain phase in our very modern society. It has all the elements that have an especial appeal to the people. Argal, since we are a democratic people, why discredit an institution buoyed up by the voice of the people, or show displeasure because popular sentiment is founded on the idle talk of an idle hour? The answer to this as formulated by us would be that though we recognize the futility of our protest, even a small, weak voice might be the nucleus of larger vibrant tones, which later on would attract some attention to a charlatanry that as yet has not become manifest to everybody.

The Surgical Shop has as many patients as there are leaves in Val-lombrosa. The system obtaining is on similar lines with our wholesale houses. In fact, Mr. Gradgrind, in Dickens' "Hard Times," was a mere amateur in comparison. The surgical Master-mechanic sees his patient only when he operates. Dispatch is his watchword, for many "leaves" are falling or about to fall. His personal responsibility, if there is any responsibility in so well-conducted a house, ends when the patient is carried from the operating room. Others watch for unfavorable symptoms, for the Master-mechanic is too much engaged with operations. This is the system, and as such merits consideration.

A house, whose housekeeping wheels are always greased, is an admirable house. It moves on without a hitch, its composure is praiseworthy, its content cannot be questioned. But like all systems it has some faults, and from our biased point of view, these are glaring. Were they

the defects in a house devoted exclusively to commerce, they would be of such minor importance that criticism would sound like supererogation. But they are ugly spots which should be foreign to a clean picture of surgical methods.

Surgery is the highest expression of the art of medicine; it is implicit with the best that the inventive and intellectual mind of the age can produce. It stands supreme and the purity of its purpose, the gravity of its mission, the weight of its decisions should be unmixed with the grosser elements of commerce. So soon as it will be a "business," it will be compelled to abdicate and pass into an abyss of discredit where it will sink deeper and deeper in its own mire. We are not blind to the fact that occasionally one or another surgeon has attempted and partly succeeded in prostituting the art of surgery by methods reprehensible on account of their cupidity, and although this has given us cause for an exhibition of wrath, our tempers have, after a time, quieted down for the reason that the offenders were generally men of no prominence, and the unholy light with which they tried to dazzle us, flickered, and soon died out. But the Surgical Shop is not an institution that shows any signs of a sickly growth with good intentions of an early demise; like unto the Upas it flourishes to poison the surrounding atmosphere. Moreover, it is so flamboyantly proud of its own prostitution that a fillip or two would not avail. Therefore wrath would be too mild a visitation; a Berserker fury would be more to the purpose.

We are not a nation of thinkers, unfortunately; in fact, we are easily dazzled by the meretricious. An English historian, some sixty years ago, said: "I hear there are some ten million people in the United States, mostly fools." This seems like harsh criticism but the enthusiasm of the addle-pated admirers of the Surgical Shop, who to-day see in quantity the virtues of quality, shows the applicability of the stricture. But even though we condone their purblindness because of inherent mental weakness, we cannot do as much for those at the head of the Surgical Shop for they are the Jacobs of the medical profession, masquerading in the clothes rightfully belonging to the Esaus.

PASTEUR AND THE POPULAR VOTE.

To point a criticism with disparagement may be unjust at times, but the realization of glaring defects in our social economy when the true status of a famous man is to be adjudged, prompts us to render ourselves open to the charge. Again and again, we have been reminded of the disagreeable fact of our imperfections but never more so than upon reading, in a Paris newspaper, that in reply to the question, Who are the

ten greatest Frenchmen of the nineteenth century, Pasteur received 1,300,000 votes out of 15,000,000, thus placing him at the head of the poll. Even Victor Hugo, the literary idol of the French people, was outdistanced by 100,000 votes, and as for Napoleon his name appeared fourth. And to show more markedly the ordinary Frenchman's appreciation of science and its resultant benefits, Professor Curie and Dr. Roux of the Pasteur Institute were among the ten in the list.

Now all this may look like a matter of slight importance to those outside France who form their opinions of the French nation from certain French plays and books, but to thinking men who have studied French traits, it has a deeper meaning. It shows how high an estimate is placed on the services of a great scientist by Frenchmen in general, and how keen is their appreciation when an opportunity arises. It illustrates that education must be of a very superior order in a country where a scientist can outstrip a celebrated author or a great statesman when a popular vote is asked. Finally, it is a declaration to the world that France's claim to the seat of honor in the domain of intellectuality can not be disputed. This is so evident, not only on account of France's recognition of her great sons but by contrast with our dearth of appreciation, that a contradiction would be ungracious.

Of course, the patriot among us will cry out against this decision, though his reasons for doing so may not be evident to himself, nor can they be intelligently conveyed to others. But patriotism is a most excellent attribute, for does it not narrow one's horizon and feed one's *amour propre* until the real faults of one's own country either appear as virtues, or at least so innocent that only a foolish, hypercritical individual would mention them? Nevertheless, though he of patriotic fervor attracts to himself adherents by the thousands, the fact remains that our general education, if put to a test similar to the one to which the French people have recently submitted, would have to declare itself a very sorry affair. We make bold to say this because of the bitter truth that has been brought home to us from time to time when the question of greatness is agitated. For instance, if the query, Who are the ten greatest Americans of the nineteenth century, were put to the American people, would the result show any mention of William T. C. Morton or Charles Thomas Jackson? Would not the rare discrimination of the people give tremendous voice to the supreme importance of the millionaire who gives his money to libraries and universities, and would not the same discrimination make but a faint whisper for those men whose genius has lessened the suffering of mankind?

Despite what perverse and stubborn natures may say to the contrary, our list of great men would invite ridicule. This we do not assert to cause a gathering wrath, but with the full knowledge that of the millions

who make up our population few know enough of our heroes of science to place even an amateur's value on their services. According to the illumination that has come to us by devious ways, our public knows only too well the minutiae of the life of the plutocrat or the popular novelist. The subversive sort of education, which the masses in this country blindly believe to be the correct pabulum for mental development, is responsible for this. And they are firm in this belief because the literary trumpery that is their lot, is concocted by those "who bring down a butterfly with a blunderbuss and talk of a pin's head through a speaking trumpet."

FLETCHERISM.

Like the poor they are always with us. Years ago Sir Andrew Clark told us what to eat and what to eschew; then the Stokerites had their innings, to be followed in quick succession by the "Natural Feeders", the "Little Grangers" and the formidable army of vegetarians. Party feeling ran high, families were torn asunder, friends who had condoned small offences in each other, ran amuck of each other in the hope of convincing by the gentle arts of strident voices, hysterical behavior that argument was unnecessary when facts were so decidedly evident. The hierarchy of science was assailed by all these dietary vagaries in the hope of gaining admission but science frowned them down, one and all. And now Fletcherism is rampantly caracoling into public view with all sorts of promises, promises which are read by the unwary as if the lettering were that of a perfect panacea. Verily, the times are ripe for this. Dowieism is dead, or is there an Elisha to bear proudly the fallen Mantle of Elijah; Eddyism is somewhat frayed, and Vegetarianism has an empty sound both spiritually and gastronomically. So why not Fletcherism.

Mr. Horace Fletcher, late of Chicago, but now occupant of a beautiful Palazzo on the Grand Canal at Venice, is responsible for its advent. Some years ago he passed through the awful tragedy of being refused by a life insurance company. He was stout, short-winded and sad. To drive away the melancholy that followed the indignities heaped upon him by the life insurance company, he segregated himself and began to chew the cud of discontent. According to grave philosophers this requires both time and leisure for if hurriedly done the vapors might rise too rapidly and a quick return to the normal state result. So this latest advocate of how to eat, ate slowly, and presto! in some weeks his rotundity was less, his protervities had given way to a remarkable mental serenity, and buoyancy was the Ichor that coursed through his veins. Chewing his food eighty-seven times and allowing it to dis-

appear by a slow process of deglutition reduced him to proportions unknown since his callow days. But the quintessence of joy was only made complete when the insurance companies vied with each other to possess this regenerated man.

As an outcome of Mr. Horace Fletcher's discovery, Dr. Hubert Higgins, formerly Demonstrator of Anatomy at the University of Cambridge, England, and for many years Surgeon to the Addenbrooke Hospital, Cambridge, has written a book entitled "Humaniculture". On page 13, the author says: "Its (Humaniculture) aim would be to cultivate life, not merely for the sake of living but for the most efficient exercise and the highest development of all the human attributes," and on page 77, we read: "An attractive feature of Mr. Fletcher's claims is that the body can be trusted to choose the food it requires by taste. In other words, that the food that gives the greatest pleasure is the best that can be taken. With certain limitations which can be readily understood, this is true. A good example is afforded by the following case. There was not unfrequently an inordinate appetite for fruit-juice, as much as the juice of from twenty to thirty oranges or two or three pounds of grapes being relished. The valuable constituent of the juice was its vegetable salts; it was, therefore, assumed that the body needed them."

The intelligence of the body, as described by the author in the latter quotation, is new in the history of materialism. We pause to ask ourselves if the small socialist of tender years, who eats a quart of ice cream is not a philosopher in embryo who is obeying the scientific dictates of his body, instead of the gourmand denounced by relatives and friends. But as we understand Fletcherism the discoverer, in promulgating mastication of his food seventy times or more, is opposed to the over-indulgence Dr. Higgins would have us believe in; rather is he of the sort that approaches to St. Simeon Stylites who to assuage the pangs of hunger made on one day twelve hundred and forty-four separate and distinct bows.

Fletcherism is not old enough to show mankind its good or bad results. But being of that large class of doubters whose faith has been destroyed by other fads, we incline towards a belief in its bad effects. Should the worst happen, we hope the fame of Mr. Horace Fletcher will not be besmirched as was vegetarianism when Kinglake wrote in "Eothen": "In Smyrna a man under the influence of a bean dietary (for this is the principal food of the Greeks during their fasts) will be in an apt humor for enriching the shrine of his saint, and passing a knife through his next-door neighbor."

MEDICAL EDUCATION.

As the season approaches for the annual crop of graduates to blossom forth from our medical schools, knowing that soon the wise advice of the Commencement Address will fall on the ears of many hundreds of closely huddled, perspiring individuals, who are about to be declared *medicinæ doctores*, we are compelled to a few thoughts on the true aims of medical education, and to a realization of some of the evils that beset it as an institution.

If, as Matthew Arnold says, the true aim of education in general is "to develop the powers of our mind, and give us access to vital knowledge," there can be little doubt that Doctor Lauriston E. Shaw is right in calling attention to the great evil of the "examination fetich." The knack of passing examinations is truly an attribute of mind. The tendency existing in our present system of medical education toward the development of this propensity is indisputable. The multiplicity of subjects, the short space of time allowed for the committing to memory of numerous facts and details, develop in the student the ability to cram for an examination, to unload his mind at the examination of much burdensome material, and, having done so successfully, to feel much relieved and speedily to forget. Added to these unnecessary conditions is the spirit of competition, and the fact that to the individual gaining the best results of the examination system are meted out the best opportunities for developing himself in a practical way. That is to say, hospital appointments go to the individuals who pass the best examinations, this reward capping the system and introducing into it something of misdirected energy and false conceptions.

Benson says that the task which lies before educators is not only to train the mind to be useful, but to awaken in whatever regions of the soul it may be possible—not the ethical soul, but the soul that is conscious of fine perceptions—to the realization of the necessity of original thought, and to supply to it the means of expressing this thought in words of its own. It is just this attribute of character which is so necessary to the investigator, and to the successful practitioner, which our present system of medical school teaching and competitive examinations tend to crush.

This difficulty does not admit of simple solution. We know that raising the standard of entrance-requirements has a tendency to make it more pronounced, as does also the marked increase in studies undertaken during the four years devoted to the study of medicine. These conditions tend definitely to increase the amount of cramming necessary, and also produce the mental habit of keeping one's store of facts near the surface and deluging them upon paper at the time of examination.

We cannot offer a solution, but we feel that with the endowment of

medical schools, with the abolition of the old proprietary schools, and the struggle for students which has existed between rival institutions of this character, medical teaching will become more leisurely. Medical students will have an opportunity to become truly educated according to Matthew Arnold's idea of education, that as students are taught by men who have given their lives to this branch of education, who take a particular interest in the individual student, his ability, his mental bent and his shortcomings, we will not have each year a crop of exhausted young men whose minds are a saturated solution of what seems to them to be unnecessary. We shall have in its stead fewer students graduated, but these informed with the true aim of medical education, which is, to our mind, simply the development of the ability to understand facts and to reason logically.

LITERARY NOTES.

"Alcohol. The Sanction for Its Use Scientifically Established," by Dr. J. Stark, has just been published by G. P. Putnam's Sons. Dr. Stark's treatise is a revision of the most generally accepted views concerning alcohol, attempting to prove that moderate drinking is healthful and not deleterious.

The Macmillan Company have published a third and extensively revised edition of Dr. Frederic W. Hewitt's "Anæsthetics and Their Administration." In this edition Dr. Hewitt has considerably condensed many parts of the book in order to introduce important new chapters without enlarging the work beyond the limits of a single volume.

Volume 2 of the revised edition of Allbutt's "System of Medicine" has just been published by The Macmillan Company. This work has been revised and enlarged and retains all the features that made the first edition so valuable. Authorities are generally agreed that it is the most important work of its kind in existence.

Mr. Clarence F. Birdseye's forthcoming book on "Individual Training in Our Colleges," will be an important contribution to educational literature. The importance of the book from the educator's point of view may be gauged by the fact that it is introduced by Dr. Elmer E. Brown, United States Commissioner of Education.

Folio Urologica, with Professor James Israel of Berlin as Editor-in-Chief, Professor A. Kollmann of Leipzig, Dr. G. Kulisch of Halle and Dr. W. Tamms, of Leipzig, as Associate Editors, and the other principal urologists of Europe as collaborators, is announced by the house of W. Klinkhardt, Leipzig. Contributions will be published in the four languages that are officially used in Congresses.

ORIGINAL ARTICLES.

RENAL CALCULUS.*

BY WM. M. ROBERTSON, M. D., St. Louis.

The existence of urinary calculi was known to the physicians of antiquity, and up to the present time there is probably no other medical subject which has engaged the study of so many men, and very few in which the literature is more extensive. During recent years, owing to the discovery of more exact methods of diagnosis and a more accurate knowledge of the possibilities and technique of renal surgery, interest in the subject has received a more decided impetus. Thus, Morris, in the Hunterian Lectures for 1898, in speaking of affections due to renal calculi, says: "If I put them in the very forefront of surgical affections of the kidney, I do so for the following reasons: (1) they are the most frequent and the most painful of the surgical diseases of the kidney; (2) few operations in surgery are so successful as nephrolithotomy. It gives absolute cure, saving the kidney from progressive destruction, and the patient from what at any time may be an imminent danger of life; (3) no disease gives rise to such a variety of morbid changes in the kidney as calculus when allowed to progress without surgical interference; (4) renal calculus, whilst slowly destroying the kidney, often physically disables its victims by its unrelenting irritation and its unyielding resistance to every form of medical and dietetic treatment."

It is not my intention to discuss the various theories of the formation of calculi. It is well known that they may be composed of a variety of substances; that they may be one or many; that they may occur in one kidney or both; that they are more common at certain ages, in certain climates, etc., but generally speaking, it is impossible to say why they should form in one person and not in another, and why they should form in one kidney and not in both, and what measures we can adopt to prevent their formation or their recurrence.

The position of a calculus is generally in the pelvis of the kidney or one of its calices, but it may be imbedded in the parenchyma, near the surface, where it may form a localized abscess, which may burst into the perinephritic tissue, thus forming the perinephritic abscess.

During recent years, the greatest advance in this field of work has been in the way of diagnosis. Newer and more exact methods have been introduced, until now I believe it is possible to make an exact diagnosis as to the presence, size and location of practically all urinary

* Read before the St. Louis Surgical Club, December 12, 1906.

calculi. The methods to which we must look for aid in making a diagnosis are: a complete history of the case, with a physical examination, disturbance of urination, chemical and microscopic examination of the urine, cystoscopy, radiography, functional diagnosis, exploratory incision. In arriving at a correct diagnosis of any kidney lesion, all of these subjects are of vital importance, and none of them are to be neglected. It is well known that a renal calculus may exist for years quiescent without giving any subjective symptoms suggestive of its presence, and that the symptoms of which the patient complains are referred to distant organs instead of the part affected, and unless all these points of diagnosis are taken into consideration, the presence of a stone might not be discovered, and the patient would in course of time be subjected to the dangers of a pyo-nephrosis, renal abscess, or calculous anuria. I consider a complete history and physical examination of the greatest importance in all diseases. Medical men are, perhaps, more prone than all others to stray off after false gods, and be on the lookout for newer and better methods of diagnosis and treatment, to the exclusion of the old and tried methods. Time was when, before the introduction of the thermometer, the "old doctor" could tell within a fraction of a degree the temperature of the patient, and only a few years ago typhoid fever and diphtheria were diagnosed at the bedside instead of in the laboratory. I am not at all inclined to underestimate the value of the newer methods of diagnosis, but I do not think it proper to subject a patient to cystoscopy, and an x-ray examination, with perhaps ureteral catheterization, as soon as one finds something wrong with the urine, without attempting to arrive at a diagnosis in the old orthodox way. Of all the symptoms of renal calculus, the one most constantly associated in our mind with this affection is pain, and while the history of renal colic may aid us materially in making a diagnosis, we must not forget that in the majority of cases, this symptom is lacking, and that there may be only an ache or a feeling of weight and heaviness in the loin, which is frequently intensified by prolonged standing, shaking or jolting, and is relieved by rest in a recumbent position. It should also be borne in mind that the location of the pain is not necessarily an index as to the position of the calculus; that in a calculus in the kidney the pain may be referred to some point in the ureter, and that a ureteral calculus may cause pain only in the kidney. Of course, pain may be entirely absent, or, if present, may be referred to some distant organ. Perhaps the organ outside the genito-urinary tract most frequently affected by this reflex pain is the stomach.

The largest stone which I have removed from a kidney was one weighing one and three-quarter ounces, in which case the only pain complained of was in the region of the stomach, and was so severe that

when I first saw the patient she had applied mustard-plasters until a space the size of a man's hand had been blistered. There was absolutely no history of renal colic, nor could I obtain from the patient any history of pain or discomfort referable to the kidney region. The urine was loaded with pus and some red blood-cells, but there was very little disturbance with urination. The things which caused her to consult a physician were: the condition of the urine, which looked more like pus than urine, the pain in the stomach, loss of appetite and failing strength. The condition of the urine at once directed my attention to the kidney, and on examination I found a mass in the kidney region about the size of a child's head.

In uncomplicated cases, the physical examination may reveal nothing. It is seldom that a stone can be palpated, even if it is situated in the ureter near the bladder, and the affected kidney may not be felt and may be free from pain and tenderness on palpation, while the other kidney, on account of compensatory hypertrophy, may be both enlarged and painful.

Disturbance in micturition and departure from the normal in the gross appearance of the urine, are frequent symptoms in these affections. Frequency and tenesmus are sometimes so pronounced as to suggest a vesical calculus, and the possibility of a renal affection may be lost sight of.

Urine Examination:—Careful and repeated examinations of the urine cannot be too strongly insisted on; urine which is approximately normal to-day may to-morrow reveal signs which are of the greatest assistance to us in making a diagnosis. It is well to divide these cases into two groups: (1) the infected, and (2) the non-infected. These latter cases, which have escaped infection and probably great destruction of the kidney, are especially deserving of repeated examinations, and the urine is likely to show marked variations from time to time, according to the habits and life of the patient. A foreign substance in the kidney, as in any other part of the body, acts as an irritant, and we are likely to find small traces of albumen, hyaline casts, red and white blood-cells, crystals of various kinds, epithelium, etc. In my experience, hyaline casts have been almost invariably found, and their presence in considerable number, indicating as it does renal irritation, I consider of great diagnostic value. Blood may be present only in microscopic amounts, or in great quantity, at times giving the urine almost the appearance of pure blood. Generally, however, the bleeding is not profuse; it is intermittent in character and of short duration. It may be associated with some unusual physical exertion, though I believe that the congestion caused by the presence of a foreign body plays a more important part in its production than does trauma. In most of the cases which have come under my personal observation active bleeding has not been pres-

ent, though I have invariably been able to demonstrate, microscopically, the presence of red blood-cells, and I believe that the constant presence of these microscopic red blood-cells is of more diagnostic importance than is the history of intermittent hematuria; and notwithstanding the opinion of many wiser and more experienced men to the contrary, I believe that the urine passed during the day, when the patient is active, if examined carefully soon after being voided, by one competent and painstaking, and over a sufficient period of time, will invariably show the presence of at least a few red blood-cells.

In the other class of cases, the infected, we have added the elements of pus and bacteria, and our first duty is to make a careful bacteriological examination. The tubercle bacillus must be absolutely eliminated, as the symptoms of a tubercular kidney may duplicate in every particular the symptoms of renal calculus. On the other hand, the pus may be so abundant as to obscure the other pathological elements in the urine. In some cases, the infected urine is the only sign of disease which the patient presents, as is well illustrated in the following case: This patient, 39 years old, a native of Arkansas, was referred to me by Dr. H. R. Hall. There was total absence of subjective symptoms. After close and repeated questioning, the only symptoms of any kind I could get from the patient was a history of repeated attacks of "malaria," and a general feeling of lassitude which had existed for ten or fifteen years, and which prevented the patient from taking exercise, and prompted him to sit down whenever possible. There was no disturbance of micturition, no history of hematuria, no tenderness over the kidneys or ureters, nor could the kidneys be palpated. Three years ago the patient failed to pass life insurance examination on account of pus and albumen in the urine. He then began treatment, and has been almost constantly under some physician's care until the present time. He had gonorrhoea about twenty years ago, and the treatment he has had has been directed entirely to the bladder and prostate. When I first saw him, October 8th, he had nothing to complain of except the condition of the urine. On examining the urine, I found it to contain a little albumen, much pus, red blood-cells, hyaline casts and bacteria. Ureteral catheterization located the trouble in the right kidney, and the x-ray showed the presence of a stone. On October 16th, I removed from the right kidney a stone weighing 135 grains, and the patient is now entirely well. This case is instructive in showing how few symptoms a large stone in the kidney may cause, the value of instruments of precision in making a diagnosis, that an infected urine is not always due to an old gonorrhoea, and that the constant presence of red blood-cells and hyaline casts, are an index of trouble higher up.

The Cystoscope—Its Value and Its Limitations.—Personally, I believe the cystoscope to be the most valuable of modern instruments. I don't believe that it has replaced the older methods of examination and diagnosis. I believe that like all good things its use has been abused. I don't believe in ureteral catheterization unless there is some positive indication for it. I believe the fact that physicians who catheterize ureters indiscriminately and never see any bad effects from it, may be explained by the patients going to other sources to look for relief. I believe that to use it intelligently one must use it constantly. I believe that when a urinary trouble cannot be located, or when the trouble is located in the kidney or bladder, and the question of an operation arises, the cystoscope may give us valuable information. Of course, with the cystoscope, we don't expect to see the calculus unless it is situated at the vesical orifice of the ureter, but we can positively exclude affections of the bladder; and frequently departure from the normal in the appearance of one side of the trigone, and the urethral orifice, will demonstrate which side is affected. If blood or pus is present in considerable amount, this can also be determined, but if it is small, then ureteral catheterization becomes necessary. I consider the cystoscope in many of these cases of considerable therapeutic value. The warm solution with which the bladder is filled causes some relaxation of the muscles, and the ureteral catheter causes a dilatation of the ureteral orifice and a stimulation of the muscular coats of the ureter; and after such an examination I have frequently seen the stone expelled and the patient instantly relieved of all symptoms.

In June, 1905, I saw, with Dr. H. G. Mudd, a patient who gave all the symptoms of a stone in the right kidney or ureter. We made a cystoscopic examination, and found the ureteral opening a large gaping hole with the surrounding mucous membrane prolapsed, and seeming to show the outline of a foreign body. An x-ray picture was taken, which did not show a stone, or much of anything else, and after several ineffectual attempts to get a good x-ray picture, and considering the symptoms and the cystoscopic findings, Dr. Mudd decided upon an operation. As we thought the stone was located at the vesical opening of the ureter, a supra-pubic cystotomy was made. No stone could be felt, and a large sized catheter passed without obstruction into the pelvis of the kidney. It was not thought justifiable to do a further exploration, and the case was considered one of mistaken diagnosis. The patient made an uneventful recovery. Ten months later, he again came under our observation with all his original symptoms much intensified. Pain was constant; frequent urination deprived him of sleep, and life had become a burden. A cystoscopic examination was again made, and the picture was more suggestive of stone than before. An x-ray picture was again taken, this time by a capable and experienced

man, Dr. M. B. Clopton, and a stone of considerable size was shown in the ureter at its point of entrance into the bladder. To eliminate every source of error, it was thought best to have another x-ray picture taken with a stylet catheter passed as far up the ureter as possible. Accordingly I attempted to pass such a catheter, but while the tip would readily engage in the ureteral orifice, its further passage was blocked. After making numerous unsuccessful attempts, it was given up as impossible. After a few days, the patient returned complaining of great pain. Another cystoscopic examination was made, and much to my surprise I found a tremendous prolapse of the vesical mucous membrane resembling a tumor about half the size of a man's fist. As Dr. Mudd, to whom the patient belonged, was out of the city, I told him to return in a couple of days, when Dr. Mudd would be home, and be prepared for immediate operation. When we next saw him, all symptoms had disappeared. He told us that after my last examination he had passed a night of agony, and then for a couple of days gave symptoms of the presence of a stone in the bladder, with interrupted stream, etc. After this, he passed from the urethra what seemed to him to be a number of clots, following which he experienced complete relief from all the painful symptoms from which he had suffered for years. I made another cystoscopic examination, and found the bladder and ureteral orifice approximately normal. It is now seven months since this last examination, and the patient has remained perfectly well and free from all annoyance. I consider his relief due to the stiff stylet catheter dislodging the stone, dilating the ureteral orifice, stimulating the muscular structure of the ureter to increased activity, and finally at my last examination the relaxing effect of the warm solution in the bladder upon its muscular coats. There has not been another x-ray picture taken, but from the history, the present condition of the patient, and the cystoscopic findings, I am convinced that the stone escaped through the urethra. At my original examination, catheterization was not attempted, and in the light of subsequent events, I believe that if it had been, the patient would have been spared many months of pain and suffering.

Another case, was one which I saw with Dr. L. H. Behrens, to whom I am indebted for the following data. The patient was treated by Dr. Behrens in 1903 for pleurisy with effusion. The trouble came on insidiously without pain or other acute symptoms, and was suggestive of a tubercular process, though tubercle bacilli could not be found, nor could a tubercular process be located in the lungs. He was aspirated seven times in five weeks, and finally made a perfect recovery. About a year and a half later, he again came under Dr. Behrens' care, this time his only complaint being hematuria. There was no colic, no pain or other symptoms. The bleeding was profuse, the urine resembling almost pure blood. When I first saw him, after the hematuria had continued

for about six weeks, the patient was in a condition of profound anemia; the mucous membranes were white, and the skin waxy. The patient was so weak that he had given up work, and had remained quiet at home for two or three weeks. Of course, considering the previous history, the present condition of the patient, the profuse, prolonged and painless hematuria, the question of a tubercular process at once suggested itself to me, but this had already been practically eliminated by Dr. Behrens. In order to locate the origin of the bleeding, we made a cystoscopic examination, and found an intermittent stream of what looked like almost pure blood, coming from the left ureteral orifice. On the following day the patient returned, bringing with him a stone about the size of a grain of rice, which he had passed that night from the urethra. The bleeding had ceased, and more than a year and a half have now elapsed without any recurrence, and the patient reports himself as being in better health than for many years.

I have had, with Dr. Behrens, another very similar case with the same happy termination, and were it not for a desire not to become tiresome from reporting clinical histories, I could mention a number of others. Sometimes the stone is passed, and the patient brings it to me. At other times, the stone becomes lodged in the urethra and has to be removed, and then again the patient is conscious of having passed something, but it is lost, and he returns jubilant over the relief from his misery.

There is to my mind no longer any question as to the value of the x-ray in the diagnosis of renal calculus. I believe that a capable man, perfectly equipped and capable of interpreting his findings, can in the vast majority of cases definitely determine the presence or absence of stone. I know nothing about the practical workings of the x-ray, but a picture, to be satisfactory to me, must show the vertebrae with their transverse processes, the last two ribs, the psoas muscle, and in the absence of a stone, an outline of the kidney. If a stone is present, its outline must be sharply defined, and not an indistinct blur on the plate. Dr. H. P. Wells, who has recently done this work for me, has been able to meet these requirements, and I have come to consider his negative findings as important as the positive.

Functional diagnosis in connection with renal calculus is important only in so far as it shows which kidney is diseased, or, if both are affected, which one is doing the more work.

Exploratory Incision.—While the text-books give us exact rules for diagnosing all abdominal lesions, just as they do to diagnose a chancre from a chancroid, we know that all rules have exceptions, and now and then, as a last resort, we must have recourse to the exploratory incision, and in doing this, whether we acknowledge it or not, we ourselves know that we have met with diagnostic defeat.

SOME OBSERVATIONS ON THE WATER SUPPLIES OF THE PHILIPPINE ISLANDS.

By J. D. LONG, M. D.

P. A. Surgeon, U. S. P. H. & H. M. Service, Assistant Director of Health.

So far as it has been possible to determine, there are at present, only six towns in the Philippine Islands having water supplies that are worthy of the name of water supply as we consider it. These towns are Manila, Mariveles, Romblon, Balingasag, province of Misamis, Mindanao; Mambajao, Island of Camiguin, and the Leper Colony at Culion.

The system in Manila was built by the Spaniards, the work being partially completed in 1880. The system, especially in later years, has not been entirely satisfactory for the reason that the supply is uncertain; in some portions of the city, at certain hours of the day, no water being obtainable. Aside from this, the water is not a good drinking water, as it contains amoebæ, protozoa and numerous bacteria. There is always present a feeling of uneasiness for the reason that there are persons living on the water shed, and in spite of all precautions that may be taken, the water may become infected with cholera organisms at almost any time. This will be remedied soon, however, as the work on a new system is now under way, the advantages of the new system being increased supply, an uninhabited water shed and hence less danger of infection.

The Mariveles system is for the use of the Quarantine Station, Military Post, and the town of Mariveles. It was installed by the army, the expense being paid from public funds, and was completed in 1901. The supply is secured from a mountain stream, which drains an uninhabited water shed, and is conveyed through a four-inch galvanized iron pipe to the town, post and station. A fairly constant supply, amounting to about thirty tons per hour, can be secured for almost the entire year. Previous to the installation of this system, dysentery, intestinal worms, diarrheas, etc., were common and many deaths resulted from these diseases. Since the system has been in use, these diseases have almost entirely disappeared and practically no deaths are traceable to such causes now. The water has been in constant daily use by the force at the Quarantine Station for drinking, and all purposes without boiling or filtering, and there has been no case of dysentery or other disease traceable to it, although on several occasions amoebæ have been found in the water and are presumably constantly present.

The town was invaded by cholera in August, 1903, the first invasion since 1888; in a very short time the disease was completely eradicated, there being in all, twelve cases and seven deaths. The reason it was so

easily and quickly eradicated can be attributed to no other cause than the excellent water supply.

There is a population of 2,000 in the town, the condition of living and habits of the people being the same as in other towns of the Islands. It is interesting to note also, that over 12,000 people were in detention in the barracks at the Quarantine Station during 1902 and 1903, and it was the exception to have secondary cases occur among the contacts, in fact it occurred in only one or two instances.

The system at Romblon was begun by the Spaniards and perfected by the Americans. The water is obtained from a mountain stream above all habitation and is conducted in pipes to the town. The same applies here as at Meriveles; dysentery is rare and the death rate is lower than in other towns.

The systems at Balingasag and Culion were built by the army and Insular Government, respectively; no data are obtainable regarding health conditions before or since installation.

The system at Mambajao was built by the Jesuit Fathers.

Other towns in the islands use various methods of getting water; those situated on rivers use water from them; inland towns use shallow surface wells or springs; some collect rain water, others use dug wells lined with stone and in some few towns there are artesian wells.

To mention a few instances, in Malolos, Paombong, Haganoy and Lubao and adjacent towns, the water is principally obtained from surface wells or from a portion of the delta of the Rio Grande de Pampanga. At high tide, the salt water from the bay backs up the river for considerable distance, hence water can only be obtained at low tide; and as the current has been practically at a standstill for some time, all the filth and waste products from the towns above are passing out to sea at the only time that water can be obtained; it then has to be carried for some distance in cans, costing from eight to ten cents, Philippines currency, per carga, a carga being two kerosene cans. In Norzagaray, Angat, Baliuag, Quingua and Pulilan, the water is taken from the river also. It is interesting to note that in Baliuag, the great majority of the cases of cholera in the past few months have occurred on or near the river banks. In Arayat a portion of the water for those who can afford to pay for it, is carried from a spring that issues at the foot of Mt. Arayat; the balance comes from the river. Candaba, San Luis, Apalit, Calumpit, and Macabebe get their water almost entirely from the river. In traveling by the river from San Luis to Apalit, it was noticed that each house on the river bank had two bamboo platforms jutting a short distance into the river, the upstream platforms being used to procure drinking water, the lower one being used as a water closet and laundry. This is reasonable, as far as the individual is concerned, but the man below, who secures his water

from *his* upstream platform gets it only a short distance below his upstream neighbor's water closet and laundry. Several dead animals were also noticed floating in the river.

In Betis there is a well; no one seems to know definitely anything about when it was put in or by whom. It is said to be about ninety feet deep. The water rises to the surface of the ground and gas bubbles up through it continuously. This gas, I am told, is inflammable. In San Fernando, there is an artesian well owned by the railroad company; the water is clear and good, being only slightly salty in taste. The people who use it say they quickly get accustomed to this and do not notice it.

The towns of Paete in the province of Laguna, Luchan and Tayabas in Tayabas province, conduct the water from mountain springs through the town in open canals, users dipping the water from the canals as needed. There are other canals also where laundry is washed and waste matters are carried off. Examination of water from these canals shows numerous amoebæ, monads and bacteria. In Cebu, water is bought from water boats which bring it from the Island of Mactan; the water is considered good, but is very hard.

In Iloilo, water is obtained from wells, cisterns, rain water collected in tanks, or is brought from the Island of Guimeras.

When one considers the number of diseases that can be conveyed by water, the danger from the above named sources of supply can readily be appreciated. It, of course, can be remedied by boiling, but there are many reasons why this will not do. To begin with, the native does not like boiled water; he says it produces disorders of the stomach, rumblings, indigestion, diarrhea, etc.; that the water is dead and that he does not like the taste of it; further, it is too much trouble, and in places where fuel has to be bought, the extra cost of wood amounts to a good deal to the poor man who makes only a few cents per day. Some who do boil it, only do so spasmodically, once per week for example; this amount is sometimes thought to give immunity for perhaps a week and is drunk as one would ordinarily take medicine. Further, when it is boiled, it is allowed to stand around the house in a jar uncovered. Any one who wishes a drink dips in with an empty can or cocoanut shell, wetting his fingers with the water of the jar each time, and if he does not drink all he has dipped out, he carefully pours it back.

When one considers that many natives clean the anus after defecation with the fingers wetted with a little water and frequently are not over particular about washing their hands, it is easily understood why boiled water frequently gives a false sense of security.

Spring water is highly thought of in some sections, but I have seen but few springs that were properly protected so as to prevent surface contamination or use by animals, and as there are always a number of women around them washing clothes, they can hardly be considered safe.

In collecting rain water it is frequently forgotten that dust, bird droppings and decaying leaves and occasionally dead mice are washed in with the water. Amœbæ have several times been found in rain water, that from its manner of collection was thought to be absolutely safe.

Water from surface and dug wells have uniformly shown amœbæ or monads, or both, with a high bacterial count. There are a few artesian wells in the islands, viz: Cavite; two, one in the Navy Yard, 500 feet deep, and one in the town 230 feet deep. They both furnish fair quantities of good water; the percentage of chlorine is high, but we are told that while this ordinarily indicates sewage contamination, in deep wells near the sea it is of no significance. The well at the Arsenal contains amœbæ and other protozoa, but it is said that this is due to faulty construction and can be remedied.

The well on Engineer's Island gives the same result on examination, but it is said the defect in construction can be corrected. This well has a depth of 500 feet. The well at the Bureau of Cold Storage is 700 feet deep and gives good water negative for amœbæ. The wells at San Fernando, Angeles, Camp Stotsenburg, and Caloocan, varying from 65 to 1,000 feet in depth, give good supplies of good water; no laboratory data for these wells are available, however.

A well at Singalong, according to laboratory report, gives water fit for boiler purposes only; the water contains amœbæ and monads. A well at Cebu gave water with very high percentages of total residue, scale forming ingredients, chlorine and also amœbæ and monads.

At Iloilo the limit of the machine was reached without striking water. Wells are being drilled at the present time at Olongapo and Ft. McKinley, but no data are as yet available.

It has been possible to secure information with regard to one driven well only. It is located in Santa Ana and is about ninety feet deep; examination shows high percentages of hardness and total solids, 500 bacteria per c.c. and monads.

With regard to artesian wells, it is thought that most persons will agree with the statement, that if these wells are carefully drilled, cased and protected, and are deep enough to avoid surface contamination, and care is taken not to infect the well during drilling by using infected water to soften the ground for the bit, nor to infect it after completion, that from a bacteriological point of view, only sterile water should be obtained. As regards potability, the chemical examination only can determine and no guarantee can be given with regard to it; this depending on the nature of the country and its geological formation.

The importance of a good water supply has been recognized for centuries; witness the aqueducts of Rome, some of which are in use to the present day; the canals, tanks and cisterns of Nineveh, Babylon, Egypt

and Carthage; the remains of tanks and canals have also been found in Mexico and Arizona. To further emphasize this fact, it is only necessary to name a few of the more common and frequent water-borne diseases, viz: Cholera, dysentery, typhoid fever, intestinal worms, guinea-worm disease, and other disorders brought about by excessive numbers of bacteria.

It is firmly believed that fifty or more per cent. of all the difficulties encountered in eradicating cholera, the majority of the cases of dysentery, the greater portion of the deaths among infants, the great number of cases of anæmia due to intestinal worms and parasites, is directly due to the very inferior grade of drinking water that the inhabitants of the Islands are compelled to use to-day.

Methods of purification are bound to be unsatisfactory in the Philippines for the reason that the people do not care to go to the trouble or expense. Sterilization by boiling, with its drawbacks and disadvantages, has already been discussed. Distillation is out of the reach of the majority and filtration is not satisfactory for the reason that filters require constant intelligent care and so far, none have been found that will remove amœbæ at all, and twenty-eight bacteria per c.c. seems to be as low as the count can be gotten. When there is a constant possibility of having cholera infected water to deal with, it can readily be seen that filtration will not serve.

Chemical purification is entirely out of the question, as the natives would at once say that the water had been poisoned.

In view of the foregoing, the solution of the question seems to be as follows:

In towns near the mountains, where a stream is available, a reservoir could be constructed and the water piped into the town. In view of the history of the Mariveles water supply, I do not think the presence of amœbæ should prohibit the use of such water, provided contamination by fecal or other waste matters can be excluded.

In towns where streams are not available, artesian wells could be used, providing there is a sufficient number of inhabitants to stand the expense of construction without undue hardship.

In towns with too few inhabitants to bear the expense of such a well, driven wells could be used, as they are well within the means of even the smallest towns. The water from driven wells could not be considered as equal to artesian or mountain water. It is, however, infinitely better than can now be obtained in the smaller towns and barrios and the depth of such wells, with protection from contamination of a considerable area around them, should insure protection against infection from cholera and intestinal worms at least, and possibly even against amœbæ.

The objection that these wells supply only small amounts of water

can be met with the statement that barrios are small usually, and do not need a great quantity of water; as these wells are cheap, a number could be put in, in battery, so to speak, connected to one pump, thus insuring a supply equal to the capacity of the pump at least.

Realizing the fact that the people of the Philippines will not for many years to come take the initiative in matters of this kind, and in view of the great importance of obtaining a good water supply throughout the islands as quickly as possible, in order to assist in the eradication of cholera, in the reduction of infant mortality, in the eradication of anæmias due to parasites of the gastro-intestinal tract, and, from another point of view, to give fire protection in towns where there is none at present, however imperfect it may be, the following was prepared and submitted to the Honorable Secretary of the Interior, with whose permission I present it:

(ACT NO.....)

AN ACT PROVIDING A METHOD OF CONSTRUCTING MUNICIPAL WATER SUPPLY SYSTEM AND THE IMPOSITION OF A WATER TAX TO PAY FOR SAME, CREATING A "MUNICIPAL WATER SUPPLY FUND" IN THE INSULAR TREASURY AND APPROPRIATING THE SUM OF.....
..... PESOS TO THE CREDIT OF THE SAID FUND.

By authority of the United States, be it enacted by the Philippine Commission, that:

Section 1. There is hereby created in the Insular Treasury, a permanent reimbursable appropriation, under the designation "Municipal Water Supply Fund," to be used for the purpose of furnishing the municipalities of the Philippine Islands with pure and adequate water supply, as hereinafter provided.

Section 2. The Director of Public Works, in conjunction with the Director of Health, shall cause to be prepared plans and estimates of cost for the installation of a water supply system for any municipality, upon request by resolution of the municipal council, approved by the Executive Secretary. Such plans and estimates shall be prepared in such form that, if accepted by the municipality, as hereinafter provided, they shall form the basis for an agreement on the part of the Government of the Philippine Islands with the municipality to install the water system as proposed for the cost estimated.

Section 3. The municipal council shall, subject to the approval of the provincial board, fix the limits of the water district to be benefited by any such system, within which the water tax may be levied as hereinafter provided.

Section 4. The municipal council, upon receipt of the plans and estimates provided for by section two, of this Act, if the construction of the water system therein proposed appears to them to be for the best inter-

est of the municipality, shall, by resolution, fix a special per capita tax sufficient to pay the cost thereof, to be levied within the water district fixed as prescribed in the preceding section upon each person whose residence is within such district and who is subject to the payment of any other form of tax to the insular, provincial, or municipal government. The per capita rate of such taxation shall not exceed three pesos per annum. Such resolution shall also fix the length of time during which this tax shall be collected, which in no case shall exceed five years.

Section 5. Such resolution, after approval by the Executive Secretary as to the sufficiency of the proposed taxation to meet the cost of the work to be done, shall be submitted at a special election for ratification by the persons subject to the tax therein proposed to be levied. Such election shall be held in the same manner as any other special municipal election, except that the municipal president shall order same and fix its date by notice posted at the main entrance to the municipal building and in a public and conspicuous place in each barrio within the water district, which notice shall state the time, place and purpose of the election, shall quote the resolution of the council which is to be presented for ratification, and shall state that all persons subject to the payment within such district of any taxes to the insular, provincial or municipal governments, are entitled to vote thereat. The municipal treasurer shall prepare a list of all such taxpayers, which list shall be posted and protests received in the same manner as provided in section 9 (b) of the Municipal Code. The ballots to be used at the election shall be prescribed by the Executive Secretary and furnished the municipalities in the same manner as other municipal forms.

The board of election judges shall certify the result of the election to the Executive Secretary, and if the proposed resolution of the municipal council has been ratified by the taxpayers, the certificate of the results of the election shall be accomplished by a resolution of the council accepting the terms of the Insular Government for the installation of the water system and levying the proposed tax to pay therefor.

Section 6. When the terms of the Insular Government have been thus accepted and the tax levied, the Executive Secretary shall notify the Director of Public Works and the Director of Health to at once proceed with the installation of the water system. The expenses of installing the system shall be paid by the Insular Disbursing Officer, or by any other disbursing officer when the Executive Secretary may so direct, upon vouchers approved by the Director of Public Works. Copies of the certificate of the result of the election and the resolution of the municipal council shall be furnished by the Executive Secretary to the Insular Auditor.

Section 7. Upon the completion of the work necessary for the com-

plete installation of the system in accordance with the above mentioned agreement, the Executive Secretary shall be advised of such fact by the Director of Public Works and the Provincial Treasurer, upon the certification of such fact by the Executive Secretary, proceed to collect the tax levied. He shall deposit such collections monthly in the Insular Treasury to the credit of the "Municipal Water Supply Fund" and shall render to the Insular Auditor a separate account for these collections in such form as the Auditor shall prescribe. The tax shall be payable in four quarterly installments, payable during the months of January, April, July and October of each year. The quarterly payment shall become delinquent after the last day of the month within which it is payable, and a penalty of one hundred per centum shall be added thereto, to be collected in the same manner as the original tax. The collection of the tax may be enforced in the same manner as provided for the enforcement of the collection of the cedula tax in section 122 of Act 1189, as amended, but the time of imprisonment shall be proportionate to the amount of the water tax imposed as compared with the amount of the cedula tax imposed by the above named Act.

Section 8. The provincial treasurer shall collect this tax during the period of time specified in the resolution of the council establishing same, unless the entire amount necessary to pay for the work done shall be sooner collected and the municipal council shall order the discontinuance of the tax. Any amounts resulting over and above the cost of such work, shall be paid into the municipal treasury as a trust fund to be expended by the municipal council for the maintenance or extension of the system for whose construction it was collected.

Section 9. The Director of Public Works shall advertise for bids for all work to be performed under the provisions of this Act, by advertisement published for ten days in a paper of general circulation throughout the islands, and the contract shall be let to the lowest responsible bidder, unless the Director of Public Works shall find that the work may be more advantageously performed by the Bureau of Public Works, in which case all bids shall be rejected and the work performed directly by such Bureau.

Section 10. If, after beginning the work, it shall be found impossible to complete same in accordance with the agreement entered into with the municipal council, the work may be discontinued by order of the Director of Public Works, with the approval of the Executive Secretary, and the value to the municipality of the work accomplished, in proportion to that agreed upon, shall be determined by a committee composed of the Executive Secretary, the Director of Public Works and the Director of Health, and the tax ordered levied shall be collected only for such time as shall realize a sum sufficient to pay the amount which may be fixed by the com-

mittee named as the equitable value to the municipality of the results accomplished. Where the work done results in no benefit to the municipality no charge shall be made the municipality therefor, but all payments shall be a charge against the "Municipal Water Supply Fund" above provided for. To meet such possible losses, a surcharge of ten per centum of the probable cost of the work shall be included in each estimate furnished any municipality in accordance with section two of this Act.

Section 11. There is hereby appropriated, from any moneys in the Insular Treasury, not otherwise appropriated, the sum of pesos to be placed to the credit of the "Municipal Water Supply Fund" created in section one of this Act. This sum shall be and remain a part of said fund, subject to expenditure as herein provided, until such time as there may arise in such fund a surplus equal to the amount of this appropriation. When such surplus shall be found to exist the sum herein appropriated shall revert to unappropriated funds in the Insular Treasury.

The advantages of the above are apparent; the people can have water and be taxed, or no water and no tax as they may wish. The tax per capita is small, the minimum being \$15.00 to be paid in a period of five years; this sum, compared to the expenditure for water now, from ten to thirty centavos daily is nothing comparatively speaking. The municipality loses nothing if the system is not a success, as the tax is not levied until the system is a success; this also obviates the necessity of paying for water and paying the tax at the same time, which might be burdensome on the very poor. When the work is finally finished, the money appropriated originally reverts to the Government and all it has lost was the use of the money for a period of time in which it could hardly have been used a better advantage.

A CASE OF TUBAL ABORTION, WITH COMPLETE DETACHMENT OF FOETUS FROM PLACENTA AT SIX MONTHS—RESULTING IN OMENTAL ATTACHMENT AND BEGINNING LITHOPEDIUM.

BY O. H. ELBRECHT, M. D., St. Louis, Mo.
Superintendent and Surgeon in Charge Female Hospital.

Patient was admitted to Female Hospital Aug. 7, 1906; name, C. P.: age, 31; German; occupation, housewife; had three previous labors; two children alive, one dead; no abortions; weight, 117 pounds; size, 5 ft. 2 in.; previous general health has been very good up to the past few weeks, when she suffered with cramp-like pains in the abdomen and

small of the back. Bowels, regular and 18 urinalyses made during her stay in the hospital, all were negative. Last menstruation, Jan. 26, 1906; date of quickening, June 15th; a week ago, that is, Aug. 1st, patient had done some washing and in the evening she became sick with cramp-like pains in the back and right side of lower abdomen. The pain came on gradually, but it suddenly increased to severe pain, so she sent for a physi-



FIG. 1.—LITHOPEDIUM.—Showing the characteristic configuration and the beginning calcification about the scalp. The roughened surfaces on the anterior surface of the trunk and on the contorted extremities show the attachment of the omentum.

cian, who prescribed and relieved the pain for the time being, but for two days following she had some pain and headache. There was absolutely no bleeding from the vagina during the attack. Since that time she has felt no foetal movements and at present is somewhat weak and tired and has some pain in the small of her back. Temperature, 98; pulse, 96; respiration, 22. Accelerated pulse rate was thought to be due to excitement incident to leaving her children and coming to the hospital. No

evidence of syphilis or rickets; chest, normal; bacteriological examinations of vaginal secretions for gonococci, by Gram were negative.

Pelvic Measurements; Interspinal—26 c.m.

Intercristal—29 c.m.

Bi-trochanteric—31 c.m.

External Conjugate—20 c.m.

The abdomen was ovoid and its greatest circumference was $79\frac{1}{2}$ c.m. The abdominal wall was of such thickness and tension that palpation was difficult, hence the exact height of the fundus was not determined;



FIG. 2.—PLACENTA.—Showing the placenta in the distal end of the fallopian tube. A, represents the proximal end of the fallopian tube. B, represents the normal ovary. C, cut section of placental tissue. D, the opening through which the foetus escaped, showing the remnants of membranes.

foetal parts could not be outlined and no foetal heart sounds were audible on auscultation.

On vagino-abdominal and recto-abdominal palpation, cervix was found open sufficiently to admit one finger. The uterus was central, softened and enlarged and a large, hard mass was found to the right and slightly posterior to it. It was slightly movable and gave but very little discomfort on pressure.

There being no special indication to operate immediately, for the patient was comfortable, she was kept under close observation.

The several blood examinations made showed, as follows:

August 17—Haemoglobin, 85 per cent.

Leucocyte Count, 10,266.

Erythrocyte Count, 3,876,000.

October 16—Haemoglobin, 95 per cent.

Leucocyte Count, 16,132.

November 16—Haemoglobin, 100 per cent.

Leucocyte Count, 10,400.

(Day before operation)

My purpose in waiting up to this date before operating, was to give the foetus a chance to develop to a viable age, if alive, for since she



FIG. 3.—PLACENTA.—Shows another aspect of same specimen two-thirds natural size.

was under constant observation, there was little danger in this, as immediate operation could have been decided upon had she developed any untoward symptoms.

Laparotomy was performed on November 17, 1906, and disclosed the following interesting pathology:

The foetus was partially enveloped by the thoroughly adherent omentum and was located in the region of the umbilicus or even slightly

above it, and showed no trace of any cordal attachment to the placenta, which was plainly visible in the right tube.

The ostium of the tube was perfectly sealed by the membranes and contained about one-half ounce of fluid, apparently serum.

The entire placental tissue occupied only the outer third of the tube, which was greatly distended and thickened, and thus accommodated the amount of pressure it withstood before aborting, and no protrusion or external evidence of a cord could be found. This proves that the cord must have been stretched or torn off, and subsequently macerated and absorbed, and that after the abortion was complete, the tube collapsed on the placenta; its membranes plugging the open end sufficiently to prevent a severe hemorrhage. She, undoubtedly, had some hemorrhage when the abortion occurred, but there was no trace of it at the time of operation.

Salpingo-oophorectomy was done, by cutting the cornu of the tube out of the uterus by an elliptical incision to insure the entire removal of mucous membrane and the wound thus made and the broad ligament were sewed with a buttonhole stitch of catgut.

The foetus was detached from the omentum by ligatures and the appendix, which was retrocecal and held down by adhesions, was also removed. The patient had an uninteresting convalescence.

The uterus was curetted at a later date to insure removal of decidual membranes but none were found; evidently they were passed spontaneously and escaped the notice of the patient.

The patient improved greatly in general health while under observation, having gained about 20 pounds in weight during her stay in the hospital.

On close inspection of the foetus, grayish white spots were noted, superficially on the skull and in various locations, which looked like early calcareous formations, and it is my belief that this would have been more typical, had the specimen remained longer. The contour of the head and the contortion of the extremities are also characteristic of lithopedium.

5600 Arsenal Street.

PEYER, HIS LIFE AND WORKS.*

BY ALBERT E. TAUSSIG, M. D.

The sixteenth century presents, in the history of medicine, the most astonishing contrasts. Side by side with the great theorists and charlatans, Cornelius Agrippa, Cardan, Paracelsus, van Helmont, and others who filled great tomes with futile speculations that in turn carried the world by storm and were forgotten, there labored modestly in the quiet of their work-rooms a group of men who were laying the foundations of modern anatomy and physiology. As the result of the discoveries of Vesalius, Columbus, Eustachius, Fallopius, Fabricius of Aquapendente, Michael Servetus and others, a flood of light was shed upon human gross anatomy, while Harvey's great discovery early in the following century made possible a scientific physiology. In the seventeenth century, the age of baseless speculation had definitely departed. No revolutionary discoveries in anatomy remained to be made, but all over Europe a host of zealous workers were dissecting and experimenting, each eager to add his mite to the sum of human knowledge. A wave of scientific enthusiasm, equal in intensity, if not in volume, to that of our day, had swept over Europe. It was into this world that Johann Jacobus Peyer was born in 1653, at Schaffhausen, near the Falls of the Rhine. His parents belonged to an old patrician family of that town and were able to give their son every educational advantage. His medical studies were begun at Basel, where he met Harder, to whose influence he owed much. Harder was one of the first to study scientifically the effects of drugs by means of animal experiment, a line of research which always remained a favorite one with Peyer. Together, the two young men showed, for the first time, that the heart contracts as the result of stimulation, not only during life, but even after death. From Basel, young Peyer went to Paris, from a physiological environment into one in which anatomy reigned supreme. Joseph Guichard Duverney was then at the height of his fame. The son of a doctor, the precocious boy had completed his medical education at an absurdly young age, was made a member of the Academy of Sciences at 26 and Professor of Anatomy at the Jardin du Roi at the age of 31. While all the great anatomists before him had been practitioners as well, Duverney, defying the prejudices of his time, devoted himself exclusively to anatomy. In the eulogy with which custom bade each academician to celebrate his predecessor, Fontanelle, who succeeded him in his seat at the Academy, relates marvelous tales of the contagiousness of his enthusiasm. Not only was his auditorium crowded with students and members of the faculty, but members of the nobility, women as well as men,

* Read before the St. Louis Medical History Club, March 28, 1907.

were wont to attend and, it is said, often carried away with them portions of the cadavers dissected. But Duverney had the defects of his qualities. His anatomical work, which was accurate and scientific in the highest degree, did not content him. In the effort to interpret his observations he loved to launch himself upon baseless and often absurd speculations, and it was these, rather than his data, that he considered his chief contributions to knowledge. In 1687, Peyer, then 34 years old, returned to Basel, took his degree there and settled down in his native Schaffhausen. Here he was soon enrolled in the teaching force of the local academy, but strange as it may seem, not as an instructor of medicine, but successively as professor of rhetoric, logic and physics. His interests, however, continued to be chiefly medical. Together with his colleagues, Screta and Wepfer, he undertook pharmacologic researches and sought an explanation of the nature of disease in the performance of autopsies. He was, moreover, one of the first adequately to describe the digestive organs of ruminants. His chief title to fame, however, rests upon his discovery of the intestinal lymph-glands that have received his name. The *Exercitatio anatomica-medica de glandulis intestinorum, earumque usu et affectionibus* was published at Schaffhausen in 1677 and reprinted four years later, with the addition of three plates, at Amsterdam. It is this second edition that I have the pleasure of showing you to-night. The book is dedicated to Harder and to Peyer's two colleagues, Wepfer and Screta. I have found its perusal suprisingly interesting. After a detailed description of the patches, exclusively macroscopic however, he gives an account of their appearance in various animals. He first found them in the cat, then in dogs, hogs, sheep, goats, cattle, dormice, moles and hedgehogs, not, however, in caterpillars. His friend Wepfer, while on a hunting expedition, found them in wolves and hares. Owing to the great difficulty of obtaining human cadavers for dissection, Peyer was for some time unable to show their presence in man. Before long, however, Screta was able to dissect a soldier who had been stabbed by a comrade, and found Peyer's patches in the intestine, and Harder soon after found them in two more human cadavers. Finally, as he relates with ill-concealed pride, Peyer himself was able to demonstrate their presence in the body of an eight-year-old girl. So far Peyer proceeds with a thoroughly modern scientific precision. It is, however, an interesting illustration of the mental attitude of his time as well, perhaps, as of the influence of his teacher Duverney, that Peyer was unable to rest content there. He must needs enter into speculations concerning the functions of the glands, for which the physiologic knowledge of the day offered no adequate foundation. In the first place, since the lacteals have no direct connection with his patches, he concludes that they cannot belong to the lymphatic system. As the result of *a priori* reasoning he finds, correctly enough, that

the digestive ferments secreted by stomach, liver and pancreas cannot suffice for the complete digestion of food and argues that it must be these patches that supply the final digestive fluid. He finds conclusive confirmation of this theory in the observation that when scraped with a scalpel the patches exude a watery secretion. By means of careful dissection he made out the presence of blood vessels and nerves in the patches. The former, he holds, bring to his glands the gross substances which, by means of the *spiritus nitro-aerus* carried by the nerves are elaborated into digestive fluid. The last half of the treatise is devoted to utterly baseless speculation concerning the part these tissues play in disease, speculations into which it is not worth while to go.

Peyer was a profuse writer. He used the rather barbarous Latin of his day, but in common with most of his contemporaries did not condescend to the use of the vulgar tongue in his medical writings. He died in 1712 at the age of 59.

WORKS OF JOHANN CONRAD PEYER.

Exercitatio anatomica-medica de glandulis intestinorum, earumque usu et affectionibus. Cui subjungitur anatome ventriculi gallinacei. 1677.

Methodus historiarum anatomico-medicarum, exemplo ascitis, vitalium organorum vitio et pericardii coaliter cum corde nati illustrata. 1677.

Meditatio de valetudine humana. 1681.

Parerga anatomica et medica. 1681.

Paeonis et Pythagoræ (*noms de plume of Peyer and of J. J. Harder.*) exercitationes anatomico-medicae. 1682.

Experimenta nova circa pancreas. 1683.

Observatio de uteri et vesicæ urinariæ procidentia. 1683.

Myrecologia, sive de ruminantibus et ruminatione commentarius, 1685.

Also many contributions to the proceedings of the K. K. Leopold Akademie.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

PATHOLOGICAL MUCOUS PRODUCTION IN THE STOMACH.—Schuetze (*Wiener Klin. Wochen.*, No. 9, 1907) in a carefully written article, goes into the question of mucous production in the stomach and its significance. He believes that, based upon his own observations and those of others, one is justified in arriving at the clinical diagnosis of catarrh of the stomach only when one has found a marked amount of mucous in the stomach contents. He lays great stress upon the method in which this is determined and points out the importance of carefully testing the fresh stomach contents to see whether or not it contains an abnormal amount of mucus. Whenever the stomach contents contains a large amount of mucus it is due to a pathological condition. The intimate mixture of the mucus with the stomach contents, the fact that the healthy stomach contents contains little or no mucus, the fact that the mucus is usually decidedly acid in reaction all prove conclusively that the presence of the mucus is not due to the introduction of the tube, as is supposed by some. The presence of the mucus is practically the only pathognomic sign of gastritis. The amount of acid may vary as in other stomach diseases, but a high acidity speaks more for gastritis than does sub-acidity, which occurs but seldom. The author's findings are at variance with the publications of some others, who maintain that sub-acidity is the rule. He points out the fact that this disease is not as frequent a one as is usually supposed.

THE TREATMENT OF EROSIONS OF THE OESOPHAGUS DUE TO LYE.—Bass (*Wiener Klinische Wochen.*, No. 11, 1907.)—The treatment of fresh erosions should be begun as soon as possible after the disappearance of the acute manifestations. In mild cases in the beginning of the third week. He recommends the soft bougies filled with lead. The treatment should be continued as long as possible. The treatment of old strictures must depend upon the nutrition of the patient. In greatly emaciated individuals or cases in which fluid nourishment can not be taken the gastrostomy should be done as quickly as possible, in order to improve the nutrition of the patient. As soon as this is accomplished and the condition of the patient permits of it, the stricture should be dilated through the gastrostomy opening. The gastric fistula should be closed only when it is found that food passes from the mouth into the stomach without the slightest obstruction. In cases in which sounds can be introduced with great difficulty and in which fluid nourishment may still be taken, theosinamin injections should be tried (hypodermic filled with

15 per cent, solution, 2 to 3 times a week). If this is without results, then gastrostomy with retrograde dilatation must be at once instituted. Inasmuch as theosinamin is said to soften not only fresh scars, but also old inflammatory masses, it would seem to be contra-indicated in cases of fresh scars, due to operation, in tuberculosis, etc. Therefore, before this treatment is started a careful examination of the whole body must be made.

THE KATZENSTEIN METHOD OF DETERMINING THE HEART'S FORCE.—Hoke and Mende (*Berliner Klinische Wochen.*, Nr. 11, 1907).—In 1904, Katzenstein described a method of determining the heart's force, in which the blood pressure and the pulse rate are determined before and after compression of the femoral artery at Poupart's ligament; and found (1) in a normal, sufficient heart, an increase of the blood pressure to the extent of 5 to 16 mm. of quicksilver, with a constant or diminished pulse rate. (2) In the normal heart, blood pressure + 15-40, with pulse the same or diminished. (3) In slightly insufficient hearts, the blood pressure zero, the pulse remaining the same or diminished. (4) In decidedly insufficient hearts, blood pressure minus and the pulse plus.

The authors have tested this method in fifty cases, using the Gärtner thermometer and manual compression. Their results were at variance with those described by Katzenstein. They found in healthy individuals with normal hearts, that with the increase of blood pressure there was not constantly the same or a diminished pulse frequency. In diseases of the kidney, however, where there was hypertrophy of the heart, the results were the same as those of Katzenstein. They do not consider this method absolutely reliable, nor entirely indifferent for in several cases they met with unpleasant complications.

CONCERNING THE CONTINUANCE OF POLYURIA IN DIABETICS AFTER THE TOTAL DISAPPEARANCE OF GLYCOSURIA AND THE TRANSITION FROM DIABETES MELLITUS INTO DIABETES INSIPIDUS.—Teschénmacher (*Muench. Medicin Wochen.*, No. 12, 1907) points out the fact that polyuria and glycosuria do not necessarily go hand in hand in diabetes, but that the sugar may disappear entirely and the polyuria continue, and recites cases in corroboration of this statement. He reports also a case of great interest in which, after a whole year of diabetes mellitus, the sugar disappeared entirely and after thirteen years the patient had a diabetes insipidus, at the end of which time glycosuria again occurred for a period of eight months, only to make way again for diabetes insipidus at the end of that time. In the search of the literature the author has not been able to find a similar case reported.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

THE ETIOLOGY OF HOG CHOLERA.—M. Dorset, B. M. Bolton, C. N. McBryde.—(*U. S. Department of Agriculture, Bureau of Animal Industry*, Bulletin No. 72).—The work on hog cholera, performed by the authors named, is of the most fascinating interest theoretically and practically. It is so very instructive concerning the falsity of our belief in absolutely established scientific truth, a definite proof that facts are always only relative; that no fact is absolute; that advance in knowledge may show the basal points of every fact as wrong. The devastating animal disease known as acute hog cholera, since Salmon's work, has been connected in its etiology with the bacillus cholerae suis. The discovery of the latter has, for years, been considered one of the great triumphs of bacteriology. That this bacillus is only a secondary factor, that the principal agent in the death-dealing disease, the acute form, is an ultra-microscopic, filterable virus, has been established by the authors of this bulletin. The details of this tedious investigation can not be followed here, but it is necessary to follow the authors in their general conclusions, mostly with their own words, to demonstrate what the character of this work is, and what careful and objective scientific work will lead to. Their experiments have shown that pure cultures of *B. cholerae suis* injected subcutaneously into hogs, usually produce only slight disturbances, although after intravenous injections or feedings, a severe illness frequently results. The disease produced in this manner may cause symptoms and lesions seen in acute hog cholera, but does not possess the characteristics of contagiousness nor of infectiousness of the blood; nor are those hogs which have recovered from such illness immune when exposed subsequently to the natural disease. In regard to the experiments with pure cultures of *B. cholerae suis*, therefore, we may say that they demonstrate the very considerable pathogenic power which that organism possesses for hogs; but they also show that the disease produced by that organism lacks several of the essential features of acute hog cholera.

The experiments with blood serum derived from hogs sick of hog cholera and proven to be free from *B. cholerae suis*, show, on the contrary, that such serum produces illness in hogs with great regularity upon subcutaneous injection, and, furthermore, that the disease thus produced possesses all of the characteristics of the natural disease, including symptoms, lesions, contagiousness, infectiousness of the blood, and complete immunity in those animals which recover. These results are in such striking contrast to those obtained when cultures of *B. cholerae suis* are used, and they are in such perfect harmony with those obtained by the use of unfiltered blood from sick hogs, that we are forced to conclude that there exists in the blood of hogs suffering from acute hog cholera, some virus other than *B. cholerae suis*, and that this virus is necessary for the production of that disease.

This virus, present in the blood of hogs sick of acute cholera, but absent from pure cultures of *B. cholerae suis*, is known to us only by the effects it produces. We have failed completely in all attempts to discover by microscopic examination or by the usual cultural methods, any visible micro-organisms in these filtrates. That the pathogenic power of the filtered blood is due to some living agent endowed with the power of reproduction, and not to the presence of a toxin alone, there can be no doubt, from the fact that the disease induced by the filtered serum is communicated from sick to healthy animals by association, and, moreover, from the fact that we have transferred the disease induced by filtered serum to a second and even a third animal, by subcutaneous injections, the serum being filtered each time previous to inoculation.

While our experiments establish beyond question that the filterable virus was present in all the outbreaks of hog cholera studied experimentally by us, it is also true that *B. cholerae suis* was present almost uniformly.

The exact role played by *B. cholerae suis* in outbreaks of acute hog cholera is difficult to define. The filterable virus seems not only to cause disease by itself as shown by the results of many of our experiments, but it seems also to be able to lower the resisting power of the hog; and thus enable *B. cholerae suis* to invade the body, and this, we believe, takes place in the majority of cases in natural outbreaks. If the filterable virus is capable of lowering the resisting power of hogs for *B. cholerae suis*, then it is easily conceivable that other agencies may also lessen the resisting power of these animals.

So it must be admitted that a disease in hogs may exist which is due to *B. cholerae suis* and having no connection with the filterable virus found by us in the outbreaks we have studied. From the knowledge we have of the pathogenic powers of *B. cholerae suis*, however, we would expect that any disease in which it is the chief pathogenic factor would be possessed of a low degree of contagiousness.

The conditions would be entirely analogous to those under which many pathogenic micro-organisms exist, as for example, the pneumococcus in the mouths of healthy individuals, and the swine plague bacillus (*B. suis*septicus) on the tonsils of healthy hogs and in the pens where healthy hogs are kept, the supposition being that micro-organisms present in small numbers or possessing a low degree of virulence, are successfully resisted until certain influences either heighten the virulence of the bacteria, or lower the resisting power of the animal body. The production of disease by feeding small quantities of *B. cholerae suis* might seem to indicate that that organism could not remain in the hog's intestines without giving rise to more or less serious disturbance, but it should be remembered that these small quantities of culture (1-10 to 1-2 c.c.) contain enormous numbers of bacilli and probably many more than the hog under ordinary circumstances is able to resist.

Whatever may be the port of entry or the influences which bring about an invasion of *B. cholerae suis*, we are convinced that the filterable virus was responsible for the high degree of infectiousness and therefore, for the spread of disease encountered in several outbreaks of acute hog cholera described in previous pages of this bulletin. It seems reason-

able to suppose that what has been found to be true in these eight outbreaks is also true of other epidemics of acute hog cholera, and that therefore the extensive losses occasioned by outbreaks of that disease are to be attributed in the main to the filterable virus. In many of the individual hogs, the fatal termination may have been, in large measure, due to *B. cholerae suis*, and the probabilities are that without the filterable virus comparatively few hogs would have been attacked.

It follows from all that has been demonstrated that, if a practical method of protecting hogs from the filterable virus should be discovered, the problem of combating hog cholera, at least the highly infectious form of that disease, will have been solved.

CONTRIBUTIONS TO THE BIOLOGY OF DIPLOCOCCUS INTRACELLULARIS.—EXPERIMENTAL CEREBROSPINAL MENINGITIS IN MONKEYS.—CONCERNING A SERUM THERAPY FOR EXPERIMENTAL INFECTION WITH DIPLOCOCCUS INTRACELLULARIS.—Flexner (*Jour. of Exp. Medic.*, Vol. 9, No. 2).—Flexner gives in these three papers the detailed results of his work on the meningococcus during the New York epidemic of 1905, that resulted in 2026 deaths. The general results were published in the *Jour. of Amer. Med. Assn.*, (1906, p. 560), and were reviewed in this JOURNAL. The great mass of detail and the great number of single observations given in these papers cannot be extensively referred to. The general trend of the investigations can be better understood by consulting the previous publication. The work on the biologic qualities of diplococcus has taken very different directions and established peculiarities of this organism which throw light on its activity in human and animal infection. It throws light on the many failures to establish the diagnosis by the microscope or culture in sporadic and other cases, by the knowledge now obtained of the biologic qualities of the coccus. This and the positive results obtained by the inoculation of guinea pigs and monkeys, have buried all doubts of the specificity of the organism and its etiologic character in cerebrospinal meningitis, and Flexner has the priority in this direction over work done, about simultaneously, in Germany by Kolle and Wassermann and by Jochman. The studies of the action of homologous antidiplococcus sera on infected monkeys are of theoretic importance only. Several could be saved by the simultaneous injection into the spinal canal of serum and culture. In some cases, by a separate injection, the serum being given 6 hours after the culture, death could be prevented. The experiments with subcutaneous injections of the serum have not yet come to conclusion. How far the results achieved will be applicable theoretically in the human disease it is impossible to tell. In acute cases the hope is slight, while in the more chronic forms, serum injections may be found to be effective. Through all of this work there runs a thought—the almost certain conclusion—that in animal as well as in human disease, the diplococcus intracellularis acts not by a septicemic multiplication, but by its great vital debility, leading to its quick death. Processes of autolysis convert the bacteria into an endotoxin that is extremely toxic and produces the disease in animals with absolute certainty. The serum, therefore, is most likely not antitoxic, but bactericidal. A peculiar suggestion is the result of ex-

periments made with normal serum, which in animals seems to retard, perhaps not to cure the disease in its earlier stages. For human meningitis the observations of Flexner must be considered as worthy of application in view of the utter impossibility of directly influencing the infection. Flexner's work is a classic product of our American science and is far superior to any work done during the last few years in Germany, although the bulk of the latter is surprisingly great.

EXPERIMENTAL ARTERIAL DEGENERATION.—Miller (*The Amer. Jour. of Med. Scis.*, April, 1907).—The question whether the arterial degeneration, after intravenous injection of certain substances, is conditioned by the increase of the blood-pressure or by the toxic effect of the substances, is not solved. Miller, in a series of careful experiments, in which physostigmin and barium chloride were added to the already known list, has been unable to interpret the results in favor of the one or the other opinion. He concludes that there are very many substances which have the effect, bacterial toxins, suprarenal extract or adrenalin, phloridzin, digitalis, nicotine, physostigmin, barium chloride and lead. Most of these increase the blood-pressure, though not all of them do so. This may be due to the fact that the investigation, starting from the idea that blood pressure was at the bottom of the phenomena, selected blood pressure raising substances. The investigation of substances not having this effect ought to be more widely pursued. Physostigmin and barium chloride cause degeneration, the latter in histologic character somewhat different from that produced by suprarenin. Subcutaneous injection of the latter may cause a definite rise of pressure, thus contradicting the assertion that arterial degeneration following subcutaneous injection of adrenalin is due to its toxicity, and to the increase of the pressure. The attempts to inhibit the pressure effect of adrenalin by amyl-nitrite were not successful. Therefore, the observations after combination of these two substances, said to prove the toxic causation of the lesions, cannot be accepted as evidence.

NATURAL PNEUMOCOCCUS INFECTION IN ANIMALS, AND EXPERIMENTAL INVESTIGATIONS OF THE ORIGIN OF PNEUMONIA.—H. Selter, (*Zeitschr. f. Hyg. u. Infect. Ur.*, Vol. 54, H. 3).—An epidemic among the rabbits in the bacteriological institute at Bonn, caused on investigation the discovery of infection with typical pneumococci. The organisms could be cultivated from all of the organs of the animals. Inoculated into other rabbits, they always produced a septicemia, with swelling of the spleen, though without particular involvement of the lungs. Only small foci of infiltration could be found. Even direct introduction of cultures into the trachea did not give rise to a pneumonic process. The demonstration that even in healthy animals (rabbits and guinea-pigs) the lungs are not always free from pneumococci and other bacteria, caused Selter to try to produce a pneumonia by cooling, or by the introduction of irritating substances into the trachea or bronchi. The result was always

negative. It is very probable that the first invasion in animals and man occurs in the buccal cavity, the lungs being directly infected from this locality. It is not explained under which circumstance a pneumonia occurs. In the same issue the author reports the results of his experiments on the presence of bacteria in normal body tissues. Generally the lungs cannot be considered as germ-free organs. Very frequently spore-forming bacteria are found. Pneumonocci and other pathogenic forms are also to be found. Deep inspiration may detach from the buccal mucosa small droplets containing bacteria which may be transported even to the peripheral portions of the lung. This same occurs also during chewing and swallowing. The bacteria pass from the lungs to the bronchial glands. Liver, spleen, kidneys and blood are, under normal circumstances, free from bacteria. The intestinal mucosa, macroscopically intact, is not altogether impermeable for bacteria. The bacteria are collected in the mesenterial glands. Even the intact skin allows of the penetration of bacteria that are confined in the subcutaneous lymphatic structures. For the freedom from bacteria of internal organs and blood, not so much the lungs or the mucosae are to be considered, but the regional lymphatic glands.

ABSORPTION FROM THE PERITONEAL CAVITY.—Buxton (*Journ. of Medical Research*, Vol. 16, No. 1, 1907).—The careful studies of Buxton on the absorption from the peritoneal cavity made on animals (mainly rabbits) result in the following conclusions: Bacteria injected into the peritoneal cavity of experimental animals, even in minute doses, reach the circulation in a few minutes. The immediate absorption of bacteria takes place by the lymphatics of the diaphragm. Assuming such an immediate absorption to take place also in the human subject, the experiments have some bearing on the subject of operative peritonitis and its treatment. To avoid a rush of bacteria to the diaphragm the Fowler position is indicated, and flushing of the peritoneum is contraindicated. Rabbits, after intraperitoneal injection of living typhoid bacilli, frequently die from toxemia in about two hours. This indicates the probable cause of so many deaths from "shock" after operation for perforation, with irrigation. If a rabbit survives the "shock" period, it may die in about 24 hours. This appears to correspond to the deaths after operation for perforation, in which the fatal termination is reckoned in days instead of hours. These conclusions apply only to cases in which *B. coli communis* or allied species are the infective agents. Reasons can be given for supposing that streptococcus infections run a different course.

DIAGNOSIS.

IN CHARGE OF

ALBERT E. TAUSSIG, M. D.

NUN'S MURMUR.—Wiedemann (*v. Leuthold-Festschrift*, Vol. I; abstr. in *Berl. klin. Wochenschr.*, 1907, No. 8).—A murmur heard over the jugular veins is generally considered pathognomonic for anemia. Wiedemann, however, states that it frequently occurs in perfectly normal individuals. In 300 healthy young men, from 17 to 30 years old, a nun's murmur was found in 80 per cent, with the head turned to one side, and in 69.3 per cent, with the head straight. It is more frequently heard on the right side than on the left, and occasionally occurs with the head straight, though absent when the latter is turned. The hemoglobin was determined in 85 men. Of these, 78 had 90 per cent. hemoglobin or over, while of these a venous murmur was audible in 73. Several men, with unusually loud murmurs showed no sign of anemia. These results coincide with those previously obtained by Weil and Apetz, and should give the quietus to the belief in the significance of nun's murmurs for the diagnosis of anemia and chlorosis.

THE STAINING OF THE CEREBRO-SPINAL FLUID.—Pappenheim (*Wien. Klin. Wochenschr.*, 1907, No. 10).—The examination of the stained sediment obtained by means of lumbar puncture has of recent years acquired considerable diagnostic importance. In particular, the estimation of the percentage of the various kinds of white corpuscles present in this fluid gives valuable information regarding the existence of meningitis, cerebral syphilis, etc. These cells, however, stain poorly and with difficulty, whereby a differential count is rendered troublesome. This unpleasant feature can be obviated by adding to the cerebro-spinal fluid some serum or egg albumin. The leucocytes then stain quite as well as they do in blood preparations.

GUMMOUS MYOCARDITIS.—Tatuschescu (*Rev. stiin. med.*, 1906, Nos. 9, 10; abstr. in *Muench. med. Wochenschr.*, 1907, No. 12).—Myocardial gummata are not infrequently found at the autopsy table, though usually overlooked by the internist. Such patients receive no antisyphilitic treatment and the disease then invariably ends fatally. Sometimes, too, sudden syncope ends the patient's life before any cardiac lesion could have been made out. If an individual who has had syphilis presents symptoms of cardiac disease, such as asystole, hemoptysis, thrombosis and the like, the possibility of a cardiac gumma should not be forgotten and a rigid antisyphilitic treatment should be inaugurated.

THE DOSAGE OF TUBERCULIN FOR DIAGNOSTIC PURPOSES.—Loewenstein and Kaufmann, (*Zeitschr. f. Tuberk.*, 1906, No. 1).—As ordinarily used for diagnostic purposes, Koch's old tuberculin is injected in increasing doses of 1, 3 and 10 mg. This increase in dosage is not necessary

and only adds to the risk of the procedure. If the minimum dose is given repeatedly, say four times in ten to twelve days, a positive reaction will be obtained in the presence of tuberculosis.

THE PROGNOSTIC VALUE OF EHRLICH'S DIAZO-REACTION IN PULMONARY TUBERCULOSIS.—Holmgren (*Ibid.*, No. 4).—In pulmonary tuberculosis a positive diazo-reaction is found only in the third stage of the disease, but may be absent even there. The more intense the reaction, the sooner death may be expected. If outspoken, the maximal duration of life will be six months, the average only two months. Practically, the reaction is a valuable aid to prognosis.

MISTAKEN INTERPRETATION OF A PHYSICAL SIGN IN CHILDREN.—Neumann (*Berl. klin. Wochenschr.*, 1907, No. 9).—A somewhat frequent occurrence in children is the presence over one of the pulmonary apices of impaired respiratory sounds accompanied by relative dullness on percussion, especially near the edge of the sternum. This finding is more frequent on the right than on the left side, and is usually interpreted as due to an incipient pulmonary tuberculosis. According to Neumann, however, this conclusion is false. The sign is due rather to the presence of swollen bronchial glands. The latter may or may not be tuberculous.

THERAPEUTICS.

IN CHARGE OF

WILLIAM ENGELBACH, M. D.

SALT FREE DIET IN CHRONIC PARENCHYMATOUS NEPHRITIS.—Peabody (*Medical Record*, March, 9, 1907).—The author reviews the literature on this subject and gives a detailed history of seven cases which were first treated without a salt free diet according to recognized methods, without favorable results, but followed by favorable results with the salt free diet. Rumpf, during his investigations relative to the salt retention in nephritis found; (a) that in adults in many cases the salt content of the kidneys exceeded that of the blood and other organs; (b) in many cases the salt content of the blood and tissues was increased in amount beyond the normal; (c) the pericardial, pleural and peritoneal fluids showed no uniformity in their salt content; and (d) the peritoneal fluid in cases other than nephritis, often showed a high salt content. Widai considered the object of the treatment to be two-fold: (1) To free the system as much as possible from salt, and therefore from water. (2) When this is accomplished to bring about a balance between the salt in the body and the permeability of the kidneys for salt. He believes that the patient's food should contain only the natural amount of salt contained in the food, which is about $1\frac{1}{2}$ grms. a day. The author's clinical experience accorded with Widai's. The edema and body weight diminished rapidly, especially when the patient was at rest in bed. In some cases the edema

did not entirely disappear, when diuretics were employed. The effect was marked in the parenchymatous variety of nephritis, the author having had little success in the interstitial type. Widal and Gaval, in discussing the rationale of the condition, called attention to the inability of nephritics to eliminate sodium chloride in a normal manner. The salt retained in the tissues required a certain amount of water to maintain it in the proper molecular concentration, thus leading to edema. In Bright's disease there was a marked retention of the chloride, but not of urea, phosphates or sulphates. They report a case of uremia with daily eliminations of 28 grms. of urea, but only 0.39 grms. of sodium chloride. For this reason they consider the chloride elimination the better index of the functioning power of the kidney than the excretion of the urea. They were able to make the edema appear and disappear by increasing or withdrawing the chloride. Bryant reported an interesting case of persistent edema of the feet in an otherwise healthy patient due to the excessive salt eating. The edema entirely disappeared on a salt free diet. Very favorable results are reported from this method of treatment in seven cases of marked edema which had failed to react to the ordinary treatment, when the salt was given with the diet. The author gives the detailed diet as used by him, in conjunction with medical treatment, as follows:

Breakfast—Coffee or tea, eggs, cereals, cream, fresh butter, fruits, bread made without salt.

10 A. M.—A glass of milk.

Dinner—Chicken, fish, potato variously prepared, bread made without salt, ice cream, jelly, fresh butter, cocoa.

3 P. M.—A glass of milk or water.

Supper—Eggs, chicken, bread without salt, jelly, custard, cream, fresh butter, tea.

8 P. M.—A glass of milk or water.

PREVENTION OF DISEASE.—Field (*Medical Record*, March 9, 1907).—In writing on the general prophylactic treatment of disease the author adopts the following classification: (1) Those caused by animal parasites, and (2) those caused by bacteria. The animal parasites are divided into three separate classes: (a) The various parasitic insects, as fleas, bed-bugs, pediculi and ticks, etc.; (b) helminths, as lumbricoides, ascarides, teniae, ankylostoma, etc.; (c) protozoa, as the hematozoa of malaria, yellow fever, rabies, filariasis, trypanosoma, relapsing fever and probably smallpox. For the protozoan diseases efforts should be made, (1) toward preventing infection of mosquitoes and (2) toward the destruction of mosquitoes. Material most efficacious for their destruction is "culicide," (consisting of equal parts of camphor gum and crystalized carbolic acid, colored with methylene blue) volatilized by heat. The methods for the prevention of the various bacterial diseases are given as follows: First, the limitation and subsequent disinfection of personal contact with the patient; second, thorough disinfection of environment and excretion; third, inspection of food and water supply; fourth, the prevention and destruction of the disease carriers, such as domestic animals, rats, flies and other insects; fifth, the elimination of other sources of conveyance, as

desiccated bacteria in dust, etc.; and sixth, the aseptic and antiseptic prevention of the entrance of pyogenic diseases through the skin.

TREATMENT OF ARTERIO-SCLEROSIS.—Senator (*Die Therapie der Gegenwart*; March, 1907), says that the early changes of arterio-sclerosis are not demonstrable clinically, and that when this is possible the disease process is far advanced. One cannot depend upon an increased blood pressure as an early sign, this depending upon the condition of the heart. He gives the indication to be met in arterio-sclerosis as follows: (1) Removal of the cause; (2) modification of the process; (3) alleviation of the symptoms; (4) prevention of serious complication. Regarding the cause of arterio-sclerosis he says chronic intoxication and infection are the most important. While arterio-sclerosis is frequently accompanied by increased blood pressure, this condition alone does not produce changes in the arteries. It is often observed as a senile process with low blood pressure as well as in young persons, due to syphilis and chronic intoxications, such as alcohol, tobacco, lead, mercury, etc., without a preceding high blood pressure. He believes that strong coffee, tea, meat extracts, gout, diabetes mellitus, chronic nephritis, autointoxication produced by excessive meat eating, may all cause this condition. Consequently the first indication is to prevent these changes by eliminating, or reducing, controllable causes. A lacto-vegetarian diet made up in the largest part of carbohydrates and fats is very commendable. This diet, however, is not applicable to fleshy people, who are commonly afflicted, or when the condition is due to diabetes. The iodide preparations are recommended to lower the blood pressure. Iodipin (1 gram, gellatin capsule 3 to 4 times daily). Sagodin (0.5 gram, tablets 4 to 6 times daily) alone, or a combination of the nitrites with the iodides, are very effective. Sodium or potassium iodides 6 to 8 grams; sodium nitros, 1 to 2 grams; aqua. ad. 200. One teaspoonful t. i. d. in milk. Another preparation is tr. iodini, 1 gram., spir. ether. nitr., 30 grams; take 20 to 30 drops 3 to 4 times daily. Nitroglycerine .1, spir. ether. nitr., 30; 15 to 20 drops t. i. d. is also useful. Warm baths of the different mineral waters are recommended in the diffuse processes. Massage and passive gymnastics must be given with great care. "Truneceks serum," "anti-sklerosin" or "Regenerol," depending for their action upon an addition of the normal salts of the blood, which are supposed to be absent in this condition, he says, have not been established as especially beneficial. He admits, however, their harmlessness and advises their trial. For the symptomatic treatment of the severe colics and cramps caused by this condition morphine is considered the best agent.

THE ABORTIVE TREATMENT OF PNEUMONIA.—Curtis (*Medical Record*, March 15, 1907).—In this article the author reports phenomenal success in his experience in treating pneumonia with an ozone-producing electric current. Out of over sixty cases of pneumonia taken as they came, covering all degrees of severity, he obtained complete recovery in every case with the aid of this treatment. Besides its curative effect he maintains that "by the proper application of ozonation, pneumonia can be aborted

at any stage, resolution becoming established within forty-eight hours from the beginning of treatment."

He uses this method in conjunction with other treatment, but asserts that it has a specific action upon the cause and pathological condition of the disease.

THE USE OF ARSENIC INHALATIONS.—Sænger (*Therapeutische Monatshefte*, March, 1907).—The author quotes Stemmer, Heermann and Hartl as authority to prove that arsenic, when used in an aqueous solution by inhalation, really reaches the smaller bronchi and vesicles of the lung. This statement, although contradicted by investigations of other men, he thinks, has been verified by his own experiments and by those of Emmerich. Previous investigators, he claims, used arsenic in the dry form and consequently were not able to find it beyond the upper passages of the respiratory tract. The fact being proven that arsenic can be applied (in the form of an aqueous solution by means of a nebulizer) to the finer ramifications of the respiratory tract, leads him to prophesy that this form of medication will be of value in lung diseases.

PRESCRIPTIONS.

The Tuberculin Preparation of Koch. The tuberculin preparations are being placed more and more into practical use, as is attested from published reports in the current literature. The following abstract (taken from *Modern Medicinal Preparations*), gives the technique of giving Koch's tuberculin as a diagnostic and therapeutic agent. There are three preparations on the market: Tuberculin "Koch;" Tuberculin New "Koch;" Tuberculin New Koch Bacilli Emulsion.

Directions and Dosage for the Use of Tuberculin Koch as a Diagnostic Agent: The apparatus needed is a hypodermic syringe, a pipette of 1 cc graduated to one-hundredths, and Tuberculin Koch. Method of injection: The morning and evening temperature of the patient is taken for two or three days in order that any variation in the course is known. Patients that run more than one-half degree C of temperature are not good subjects. (The temperature is frequently controlled previous to injection by keeping a patient absolutely at rest). Pipette being clean and dry, the tuberculin is drawn up into it to the required mark. This is allowed to run out into a sterilized dish. The pipette is now washed with sufficient distilled water to make the desired percentage solution, and this water is mixed with the tuberculin in the dish. The whole is drawn into the hypodermic syringe and injected into the intra-scapula region of the back.

Dose: All clinicians, with few exceptions, use one of the three following methods: (A) Repeated increasing minimum doses. The initial dose .0005 to .001 c.cm.; (1) .002 cm.; (2) .004 to .005 c.cm.; (3) .1 c.cm. Following the injection the temperature is taken every two hours for six hours, and thereafter every hour for twelve hours. The injections are given with intervals of three to seven days, and the individual is said to react positively when he develops within twelve hours following the in-

jection a rise of temperature of $1\frac{1}{2}$ degree, to two degrees C. (2.7 degrees to 3.6 degrees F.), or more above the mean course of the temperature previous to the injection. Constitutional symptoms arising are not distinctive features of the reaction. Patients reacting to any one of the previously stated injections are considered tubercular. This method is used by Martin and Robbins, Malm, Denison, Trudeau, Taylor, Otis, Kassel and others.

(B) Repeated injections of larger doses at stated intervals. Initial dose of .005 c.cm.; second dose .01 c.cm.; third dose .025 c.cm. Whitaker and Maragliano use this method. (C) A single injection of a large dose of tuberculin; .005 to .01 cm., White, von Yaksch and Head pursue this plan.

Tuberculin Koch in the Treatment of Tuberculosis: The maximum dose for an adult should be for the first injection .001 ccm.; to children $\frac{1}{2}$ to $\frac{1}{4}$ of this dose. This should be increased by .001 ccm. until .005 ccm. is reached, when it can be increased by .002 ccm. After .01 ccm. is reached a more rapid increase is permissible according to the nature of the case. As a rule the dose of 1 ccm. (between $1\frac{1}{2}$ m. and $1\frac{3}{4}$ m. should not be exceeded). (At the present time the only satisfactory means of controlling the size and rapidity of increasing the dose is the opsonic index. Tuberculin should only be given when the opsonic index is high, or during the positive phase, and if given during the negative phase when the index is low it may do great harm. For this reason it is now considered absolutely necessary to control these injections accurately with the tuberculo opsonic index.—EDITOR.) Technique: 5 per cent carbolic acid solution is generally employed as a diluent. A 10 per cent. solution is first made by adding 9 cc. of the carbolic acid solution of 1 cc. of tuberculin. This is kept in a dry, cold place, and used as required for the greater dilution. If the solutions assume a turbid color they should no longer be used. The injection should be made as early in the day as possible. The temperature is taken every three hours after this. If the temperature rises above 101 F. (or 38 C.) the following dose should at least be not increased or be a smaller one until the temperature does not rise for several days. The injection should not be repeated until the symptoms of reaction cease to manifest themselves. Particular care is applied in advanced pulmonary tuberculosis, laryngeal tuberculosis, extensive faucial tuberculosis, intestinal tuberculosis, cerebral tuberculosis, as well as tuberculosis complicated by other diseases. Hemoptysis is a contra-indication.

Tuberculin New "Koch). (Tuberculin TR.) The original fluid contains 10 mgm. solids to each ccm. The initial dose is 1-500 mgm. (.002 mgm.) of solid substance. If the reaction follows its use this dose must be diminished. As a rule 20 mgms. of solid matter would constitute the maximum for injection, and if no reaction follows the injection must cease or be repeated at long intervals. A local reaction not uncommonly sets in, which should subside in 24 hours. Injections are made about every second day with slow increase in the dose, so that higher elevations

of temperature than $\frac{1}{2}$ degree C. are avoided. All symptoms should subside before the next injection. Technique: Diluting fluid consists of 20 per cent solution of glycerine water, prepared as follows: 20 ccm. pure glycerine is boiled for fifteen minutes with 80 ccm. distilled water. A 1 cc. pipette divided into ten parts is used. .3 cc. of the original fluid is taken. To this 2.7 cc. of 20 per cent glycerine water is added. This dilution of 3 cc. then contains 3 mgm. solid matter, and the total dilution of active matter is 10 per cent. From this 10 per cent dilution .1 cc. is mixed with 9.9 cc. of glycerine water, making a 1 to 1/100 dilution of the original substance. Of this final dilution .2 cc. equals .002 mgm. equals 1/500 mgm. solid matter.

Koch's Bacilli Emulsion (New Tuberculin "Koch"—Bacilli Emulsion): This is a suspension of pulverized tubercle bacilli in water, to which an equal quantity of glycerine has been added. Each ccm. contains 5 mgs., of pulverized tubercle bacilli. The initial dose is .0025 mgms. of the bacillary substance, or 1/2000 part of 1 cc. of the preparation. At intervals of one or two days the dose is very rapidly increased to twice to five times the quantity previously injected, until a very distinct reaction, with a rise of $1\frac{1}{2}$ to 2 degrees C. (2.7 to 3.6 F.) in the temperature appears. Then the injections are spaced over longer intervals, six to eight days or more. Twenty mgms. is considered a maximum dose for larger quantities are not readily absorbed, and this large dose is only given at intervals of two to four weeks. Technique: The dilution is made with .8 per cent sodium chloride, to which .5 per cent phenol solution is added, if it is to be preserved for some time. .1 cc. is taken from the original bottle, with a 1 cc. pipette, divided into 100 equal parts, and added to 9.9 cc. of the .8 per cent sodium chloride solution. This one hundred fold dilution contains .05 mgms. bacillar in one cc. Of this 100 fold dilution 1 cc. is mixed with 9 cc. of the 8 per cent sodium chloride solution. This 1000 fold dilution contains .5 cc., or .0025 mgm. bacillary substance, the above mentioned initial dose.

SURGERY.

IN CHARGE OF

MALVERN B. CLOPTON, M. D.

THE SURGICAL TREATMENT OF SPLANCHNOPTOSIS.—Davis (*Trans. Western Surg. & Gyn. Assn.*, 1906, p. 55-65).—In the very nature of this trouble it is too much to expect that the operative treatment would give very brilliant results, and the author cautions not to attempt any operation until all that medical skill and mechanical aids can do, has been done. He finds that in some seventy cases reported all have been more or less benefited and even some cures are recorded. The first method described for treating gastropotosis was direct suture of the stomach to the abdominal wall (gastropexy of Duret) which was abandoned until revived

recently by Frederic Eve. The next operation was described by the author in which the gastro-hepatic and gastro-phrenic ligaments are sutured to the abdominal wall. Beyea shortened these same ligaments, and Coffey suspended the stomach in a hammock made by suturing the omentum to the abdominal wall. The abdominal wall has also been resected, or a diastasia of the recti sutured to lessen the abdominal capacity. The author claims for his method that it is easier to do than to shorten the ligaments, that it fixes the stomach more thoroughly when it swings from the anterior abdominal wall, and if a hepatopexy is to be done it is well not to have the extra weight of the stomach and colon hang to it. He has in seven cases swung the stomach by its smaller omentum high on the abdominal wall, and has had good results. Twice he has done the Beyea operation. Gastroplication, he holds of little value. For prolapse of the liver he believes that shortening the suspensory and round ligaments is the preferable operation. Enteroptosis must not be overlooked and in three cases he has had to shorten the mesentery of the small gut as well as fix the stomach.

PERFORATION IN TYPHOID FEVER.—McPhedran (*Montreal M. J.*, March, 1907).—In moderate cases in which the patient's perceptions are sufficiently clear to appreciate anything that causes discomfort (by far the largest class of cases met with in the author's experience), pain is the one symptom that may be said to be never absent; it may be only slight, but whether severe or slight it is, with very rare exceptions, persistent, and, therefore, not due to functional disturbance; other symptoms usually follow, but more gradually. Of these, abdominal tension, localized or general, is the most common and important. Of 240 cases of typhoid in the Toronto General Hospital in the last two years, five cases perforated. There were twenty-five fatal cases of typhoid, the perforations making twenty per cent of this number. One case was an ambulant typhoid that perforated in the third week without giving any marked symptoms except slight pain. In another case the operation was done before the slough had separated, and the opening in the gut closed. Two days later pain and vomiting reappeared and it was thought there was an infection of the sutures, but when the patient died two days later it was seen that two new ulcers had perforated and caused the fatal peritonitis.

OBSERVATIONS ON EXPERIMENTAL ABDOMINAL INCISIONS.—Murphy (*Boston M. & S. J.*, March 7, 1907).—Suture in layers gave universally a more satisfactory and stronger looking wound histologically. The strong connective tissue derived from the fascia on the one side blended with a like layer on the opposite side, giving a dense scar, which, at two weeks, was, from histological appearances, as strong or stronger than the new tissue arising from the inter-muscular bundles at four weeks. Relative to the overlapping of the fascia it was shown that these layers preserve their identity at the end of four weeks. It was also shown that incisions transverse to the directions of the muscle fibers healed as satisfactorily as the wounds in the direction of the fibers, if the fascias were correctly sutured

and the muscle ends approximated with a suture. Suture in layers is better than the *en masse* method, because the strong fibrillar tissue arises by proliferation from the united fascia, increasing the strength and decreasing the time necessary for repair. The best suture is to join the fascia in layers and then add a deep supporting stitch. Traumatism of the edges of the wound leads to degeneration of the muscle and its replacement by weak connective tissue, so as much care in handling the wound should be used as when handling the intestines.

THE DIAGNOSIS AND THERAPY OF SUBDURAL HEMATOMA.—Kroenlein (*Archiv. f. Klin. Chir.*, Bd. 81, Th. 1).—While the clinical picture and treatment of epidural hemorrhage of traumatic origin is fairly well understood, it is generally agreed that the symptoms, diagnosis, prognosis and treatment of subdural hematomas is still little understood, because of the limited number of cases available for study. Kroenlein reports the case of a man, 27 years old, who fell a few feet from a ladder, striking his head, and immediately developed a severe headache which persisted as the only symptom. He continued at his work for several days, but on the fifth day remained at home and on the sixth day he had an epileptic fit. On the seventh day, when he was examined, there was no evidence of a fracture of the skull. There was slight mental obtundity, and eight times the patient had a Jacksonian fit, beginning by drawing the head to the left side, then the left half of the face twitched, the left arm and leg becoming involved in order. The next day the sensorium became duller, the patient hardly responding when spoken to; no vomiting, no paralysis, but pulse had dropped from 84 to 52 in twenty-four hours. In the next forty-eight hours the stupor deepened and the dijecta passed spontaneously. On the tenth day the stupor became very deep, pulse 48, and the diagnosis lay between a contusion of the brain and a subdural hemorrhage in the right motor area of the arm and leg. In all points it differed from an epidural hemorrhage from the middle meningeal, the author never having seen Jacksonian epilepsy develop so soon after an injury, and especially where there was a "free interval." The diagnosis of subdural hemorrhage was considered more certain when on the following day the pupils, which had been equal, showed a greater dilatation in the right, and the ophthalmoscope showed nothing abnormal. With a Doyen "Kugelfraise" and rongeur an opening the size of a dollar was made in the skull, over the arm and leg centre, and on opening the dura about 60 c.m. of dark blood and coagula were removed, followed by no fresh bleeding. The skull showed no fracture. The wound was drained. The next day the patient was clear mentally, pulse had reached 84, pupils equal. The second day the drain became clogged and the patient had a slight epileptic fit, but from that time on the improvement continued, and the patient remained well after discharge from the hospital.

END TO END ARTERIOVENOUS ANGIOPLASTY.—Howard Lilienthal (*An. Surg.*, January, 1907).—In cases of impending gangrene of the extremity due to embolism, or thrombosed aneurism, or after traumatic destruction of the artery or malignant involvement of it, or in arterosclero-

sis, the author thought he might avert the trouble by transplanting the artery into the vein at a point above the occlusion. This was tried in one case, a youth of 20 years, where the occlusion was slowly developing, ulcers having appeared on the foot, arteries of the foot showing no pulsation. The vessels were exposed in the popliteal region and the artery found occluded at this level, so in a few days the vessels were exposed at Scarpa's triangle and the artery transplanted into the vein. There was a partial flow through the vessel, but the patient died of shock thirty-one hours after the operation.

ORTHOPEDIC SURGERY.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

A CASE OF SCOLIOSIS CAUSED BY INJURY OF ABDOMINAL MUSCLES.—Ryerson (*Amer. Jour. Orth. Surg.*, Jan., 1907).—The case reported shows clearly that the lack of balance of the abdominal muscles, as suggested by Reily and Taylor, may be a cause of scoliosis. The patient, a boy of 16, suffered a penetrating abdominal wound, which was sutured, and from which he made a complete recovery. One year after his accident, it was noticed that his back was crooked, and one shoulder was higher than the other. On examination, he presented a very marked right dorsal scoliosis, with a high degree of rotation.

The author believes that the abdominal etiology is very suggestive, as a factor in the causation of this deformity. He concludes that the chief offenders are the transversalis and internal oblique muscles, as the incision and scar in the abdomen are parallel to the fibers of the external oblique.

POTT'S DISEASE.—Reily (*Amer. Jour. Orth. Surg.*, Jan., 1907).—The author points out the following important factors to be noted during the progress and treatment of a case of Pott's disease. The forward tilting and projecting of the pelvis through the medium of the abdominal muscles, fascia and ribs, is important in the production of deformity. It should be restored to its normal attitude, to prevent pain, paralysis and deformity. In cases of Pott's disease in the dorsal region, the increased compensatory curves must be reduced to enable us to hyperextend the spine, in either of those regions. The characteristic symptoms and comparative frequency of Pott's disease in the adult should be borne constantly in mind. An adjustable head-support should be used in connection with braces or apparatus for the treatment of high dorsal Pott's disease.

A METHOD OF REDUCTION OF CONGENITAL LUXATION OF THE HIP BY MANIPULATION.—Davis (*Amer. Jour. Orth. Surg.*, Jan., 1907).—The author recommends that the child be placed face downward on the table,

with the pelvis resting on a sand-pillow, the leg hanging over the side of the table. An assistant grasps the knee, flexes and abducts the limb; the surgeon places his hands over the head and trochanter and presses downward. This avoids the unnecessary force and consequent danger experienced in the Lorenz technique.

INJURY AND DEFORMITY OF THE EPIPHYSIS OF THE HEAD OF THE FEMUR: COXA VARA.—Cheyne (*The Lancet*, Feb. 16, 1907).—During the last three years, the author has collected particulars of 62 cases of coxavara, and has examined many museum specimens of this deformity, deciding as a result that more than one anatomical class of the deformity is included under the general head, and that, in a majority of the cases, the origin of the deformity is connected with the mode of growth of the neck of the femur. Since 1894, an enormous literature on the subject of coxavara has arisen, especially in Germany, and the different varieties of the deformity have gradually been sorted out. These varieties are: (1) congenital, which is a depression of the femoral neck, as a rule not evidenced until the child commences to walk, and is consequently extremely difficult to prove as truly congenital. However, occasional congenital imperfections of the upper epiphysis of the femur do occur, and a few clear cases have been recorded, usually associated with other defects of the limb, of a congenital origin. (2) Infantile, occurring in children before the adolescent period, and presenting distinctive features, due to an accident either before or at the time of birth, due to rickets, with incident softening of bone and defective ossification. (3) Adolescent coxavara, which has its onset, as a rule, between the ages of 13 and 17, the patient having, in many instances, an indefinite history of pain and stiffness in the hip, of several weeks' or months' duration, and typical deformity at the time of examination. Trauma plays an important part as an etiological factor, in a considerable portion of these cases. The deformity is of progressive character, and is almost always accompanied by a period of time during which the movements of the hip-joint are almost, or quite, abolished. (4) The result of known diseases causing softening of the bone, such as rickets, osteitis deformans and osteomalacia. (5) The result of acute or chronic inflammatory processes, such as tuberculous disease and epiphysitis. (6) Osteoarthritis. (7) Traumatism, with resulting union of fragments in a position wherein the angle of the femoral neck and shaft approaches a right angle. These traumatisms may consist of separation of epiphyses, or fracture of the femoral neck. Malgaigne collected 14 cases of intracapsular fracture before the age of fifty years, and Tubby has recently reported 14 cases of separation of the epiphysis. During the last 10 years, injuries to the femoral neck have attracted considerable attention. Poland collected 33 cases, Whitman has reported a number, as have Sprengel, Braumann and Kocher. In 1903, Hoffa tabulated 87 cases of injury to the femoral neck, of which he considered all but four to be separations of the epiphysis. Kirmisson, in the following year, drew special attention to the possibility of this accident following slight violence, particularly muscular violence. Remembering the pathological anatomy of the affection,

the treatment falls under three heads; preventive treatment, treatment during the progress of deformity and treatment aiming at correction of the deformity. The first two have been greatly neglected. The author includes under preventive treatment a much more careful examination of all hip injuries in childhood and adolescence, and especially insists on radiography as an aid in doubtful cases. During the stage of progress of the deformity, abduction of necessity must be secured, and the limb must be fixed in an abducted position, for a sufficient time for consolidation to occur. Correction of deformity aims at overcoming the adduction and eversion, which is best accomplished by subtrachanteric osteotomy. Excision of the hip is never required.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. MC C. JOHNSON, M. D.

COMPARATIVE RESULTS BETWEEN SUPRAPUBIC AND PERINEAL PROSTATECTOMY.—Pousson (*Ann. des Mal. des Org. Urin.*, Feb. 15, 1907).—The discussion which has for a long time been going on as to the perineal and suprapubic method of operating for stone in the bladder, has been renewed in the case of prostatectomy. The author, after having been a warm partisan for the perineal route, has now turned to the suprapubic method with added zeal. This change of opinion has come after a personal experience with fifty cases, twenty-eight of which were done by the perineal and twenty-two by the suprapubic method, the former giving an operative mortality of 10.7 per cent, and the latter a mortality of 13.6 per cent. While the death rate by the perineal route is slightly less, yet other reasons cause the author to give preference to the suprapubic method.

In the first place the anatomic simplicity of the region traversed by the high method overbalances the complexity of that by the lower route. By the hypogastric, the cul-de-sac of the peritoneum is the only obstacle to be avoided, which is made much more easy by the Trendelenburg position. In the perineum, the bulb of the urethra and the rectum are to be avoided, the author having opened the rectum twice in his twenty-eight cases.

Again, the great facility with which the gland may be enucleated suprapubically is a second good reason for preferring it. By the perineal route this enucleation is slow and laborious. The most frequent obstacle to regular extirpation of the gland through the perineum is the extreme thickening of this region in the obese. True, in these cases the same difficulty is encountered suprapubically, but may be overcome by making a long cuticular and subcuticular incision, when even the whole hand may be put into the bladder. Postoperative hemorrhage is more likely to be encountered upon operating by the suprapubic method than by the perineal, but by making a large opening in the bladder and employing an electric light for illumination, the hemorrhage may be controlled through

thermocautery, ligature, or tamponade. While the perineal route is considered to offer the best drainage, preventing stagnation of urine and infection, yet by the use of a large drainage tube the bladder may be thoroughly drained suprapubically. In the author's experience the suprapubic wound has healed quicker than the perineal. As in some cases he has had a recurrence of residual urine—as much as 500 grammes in one case—as he regards this due to the growth of a portion of the prostate left behind at the time of operation; and as the suprapubic method affords better facilities for removing the whole gland under sight, he considers this a great advantage. The Trendelenburg position, the long incision in the bladder and electric illumination, are points in the technic which appeal to him as of great importance.

THE DIAGNOSIS OF BLENNORRHAGIA IN THE INCUBATIVE PERIOD BY CULTURE.—Griffon (*Ann. des Mal. des Org. Urin.*, Feb. 15, 1907).—The need of a very early diagnosis of urethral gonorrhea is self-evident; for it is in the beginning of the infection that our abortive remedies are most effective. Before the purulent stage of the discharge, the microscope gives very uncertain results in the way of diagnosis, so that we are often at a loss for a positive diagnosis in the first days after intercourse. The author has thought it worth while to popularize a laboratory method that has enabled him to assure himself within sixteen hours if the urethral mucosa has been contaminated at the time of a suspected intercourse. The method consists in placing a trace of the "urethral humidity" upon a culture tube and the rapid appearance of colonies upon the culture medium in case of positive result. He gives in detail his method of preparing the culture medium. This method has enabled him to affirm the diagnosis of gonorrhea in two or three days after the suspected intercourse.

SIMPLE ULCER OF THE BLADDER.—Walker (*Jour. A. M. A.*, March 23rd, 1907).—The writer defines this condition as a single non-inflammatory ulcer located in the mucous membrane of the bladder, which occasionally penetrates the entire wall. He gives as its probable causes, local disturbance in, or complete blocking of, the terminal arteries, or an interference with the trophic nerves. Infection never produces it. In the early stages the cystoscope shows a simple ulcer which has a punched-out appearance, with clean, smoothly cut and slightly indurated edges. The remaining mucosa is normal. It is differentiated from a tuberculous ulcer by the regularity of its edges, the appearance of its base, the absence of undermining of the margins, of surrounding tubercles, and of tuberculous in other organs. From the ulceration belonging to the various forms of cystitis, it can be differentiated only in the stage before the development of the inflammation. Also, when the bladder wall has become infiltrated and a calculus has probably formed, no diagnosis can be made as to the primary condition. In the early stages, irrigations of silver nitrate in the strength of 1-10,000 up to 1-500 every second day will usually effect a cure. If this does not succeed, the ulcer may be cauterized with the cauterizing cystoscope, or a suprapubic opening made and the ulcer curetted and cauterized with the Paquelin instrument. In

the second stage curetting and cauterization with prolonged drainage through a suprapubic opening are necessary to effect a cure. In the later stages, drainage, irrigation and gradual distension of the bladder are all that can be done. The change that has occurred in the bladder wall renders it very unlikely that complete healing will take place.

OBSTETRICS AND GYNECOLOGY.

IN CHARGE OF

HUGO EHRENFEST, M. D.

PREGNANCY AFTER LOSS OF ONE KIDNEY.—James Haig Ferguson (*Journ. of Obst. and Gyn. Brit. Emp.*, March, 1907).—In recent years, owing to the rapid advances of surgery, the operation of nephrectomy has become no uncommon procedure for various diseased conditions of the kidney. It follows that the obstetrician is now more often confronted with the question: Should a woman with but one kidney be advised to marry and run the risk of becoming a mother? Although the author himself had observed a patient “who, on the whole, had a less severe albuminuria and less toxic disturbance than many albuminuric primigravidæ, both of whose kidneys are known to be organically sound,” he thinks that patients who possess only one kidney, though apparently healthy, should, if they marry at all, delay marriage until after the menopause. Of course, each case must be judged on its own merits. If a patient is willing to take the risk, she should be urged at least to delay marriage until three years after the nephrectomy, so as to give the remaining healthy kidney ample time for compensatory hypertrophy. If the remaining kidney were diseased, marriage, where there is any possibility of child-bearing, should be out of the question. Whenever a first pregnancy occurs in a patient with only one kidney, she should be most carefully watched, her urine being tested regularly. This same rule holds true also for women with one kidney functionless, e. g., in hydronephrosis, or where one kidney is diseased and the other healthy. The writer concludes his article with the report of a rather unusual case. The patient was 36 years old, nephrectomized several years ago. She developed an albuminuria, had a contracted pelvis, a placenta previa, and a cervical polypus. It became necessary to interrupt the pregnancy, perform craniotomy, and remove manually the adherent placenta. Puerperium was uneventful. The albumen disappeared gradually and the patient was discharged well on the twelfth day after labor.

TERTIARY SYPHILITIC METRORRHAGIA.—E. Ozenne, (*Jour. de Med. de Paris*, rev. *Am. Il. of Obst.*, April, 1907).—As the result of the observation of five cases of metrorrhagia due to syphilis in the tertiary stage, cured by mercurial inunctions and iodide of potash internally, after all other means of treatment had failed, the writer believes that there is a definite form of syphilitic infection of a tertiary nature, that results in

obstinate metrorrhagia. This is due to late sclerotic changes in the arteries. There may be a syphilitic ulceration of the cervix, leukoplasia of the cervix, total or partial uterine sclerosis, with either atrophy or hypertrophy, gumma of the uterine body, intrauterine fungosities, or, as in the cases reported by the author, a simple arterial degeneration of the uterus resulting in hemorrhage without any inflammation of the endometrium.

CAN THE PHYSICIAN ATTEST TO THE VIRGINITY OF A WOMAN?—Felice la Torre (*Gynackol. Rundschau.*, No. 6, 1907).—The writer concludes his interesting article with the following statements: Virginity is more a moral-psychologic than an anatomic condition. The physician, therefore, must limit his statements solely to the condition of the hymen; he can positively attest only to defloration; never to existing virginity. In some of these cases the hymen is found in such condition that positive assurance can be given that an immission has not taken place. But in many cases the form of the hymen is such that the immission would be possible without a resulting laceration. In these cases the physician is unable to testify either for or against existing virginity.

SCLEROSIS OF UTERINE AND OVARIAN VESSELS DURING PREGNANCY, MENSTRUATION AND OVULATION.—Pankow (*Arch. f. Gynack.*, Bd. 80, H. 2).—In view of the interest recently aroused in the question of the etiologic significance of sclerotic changes of uterine vessels in the causation of metrorrhagia, this paper is of far-reaching importance. In examining 55 uteri, Pankow ascertained that sclerotic changes in the smaller vessels of the endometrium, mesometrium and in the ovaries, occur physiologically. The uteri of women who have borne children show an increase of the elastic tissue in the media of the vessel walls. These changes are not dependent upon age, since they are also found in young women. This sclerosis is most pronounced in the inner half of the uterine wall. A very similar condition is seen in endometrial arteries of virgins after menstruation. The main histologic difference between this form of sclerosis and true arteriosclerosis lies in the fact that in the latter condition also the larger vessels are affected.

AN UNUSUAL CASE OF EXTRAUTERINE PREGNANCY.—Lassaud and Wertheim (*Zentralbl. f. Gyn.*, No. 9, 1907).—This case seems noteworthy on account of the difficulty of diagnosis. The patient's abdomen contained a large amount of free fluid. Ten liters of a serous sanguinolent fluid were withdrawn. To the left of the uterus a hard, round, elastic tumor was felt, slightly movable and very tender to pressure. The diagnosis of a malignant ovarian tumor seemed justified. Therefore laparotomy was decided upon. On microscopic examination the removed tumor was found to be a pregnant tube. No explanation can be given for the presence of the ascites, a most uncommon occurrence in cases of ectopic pregnancy. The writers refer to a similar observation made by Moszkowicz. In this case, however, it was ascertained during the operation, that the patient had a tuberculous peritonitis.

ARTIFICIAL STERILIZATION OF WOMEN.—Offergeld (*Zeitschr. f. Geb. u. Gyn.* Bd. 59, H. 1).—By means of experiments on animals the writer succeeded in proving that the so-called "intestinal method" of Friedmann also is unreliable and does not give absolute guarantee against re-establishment of a patulous tube. Friedmann compressed the tube with an enterotripter (a small angiotribe), and placed a catgut suture in the resulting groove. In the opinion of Offergeld the only reliable method of artificial sterilization is still the complete resection of the tubes from the uterine wall in the form of a wedge, with careful closing of the wound and of the covering peritoneum.

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

ENTEROCOLITIS AND APPENDICITIS IN CHILDHOOD.—Roy (*These de Paris*, 1906) says that among children with muco-membranous enteritis a goodly number suffers from appendicitis. It is, however, difficult or even impossible to recognize the exact time at which the appendix becomes affected, because the clinical reaction occurs much later than the anatomical lesions. In these children appendicitis shows itself in all its forms, larval or latent, chronic or acute, or peracute with generalized peritonitis. In many cases the origin of the muco-membranous enterocolitis in childhood is to be found in adenoid vegetations, either already removed or still present. These adenoids are the source of an intermittent oral infection which creates digestive disturbances of various kinds, thus preparing the way for the enterocolitis. A child with such muco-membranous enterocolitis who has had one attack of appendicitis will probably have others at greater or less intervals. It is impossible to forecast the form which the appendicitis will take, although we know that in the child the grave forms are more frequent than in the adult. If in these children the appendicitis is latent or very mild, these children should be kept under close observation and medical regimen, so that operation may be performed at once if necessary. In the cases of acute appendicitis interval operation is recommended, without waiting for several attacks.

CYCLIC VOMITING.—At a recent session of the Paris Pediatric Society, Comby reported a series of seventy-two cases of cyclic vomiting. (*Rev. Men. des Mal. de L'Enf.*, January, 1907.)—A familiar history was obtained in seven of these cases. Thirty per cent had enterocolitis. Constipation, with or without enterocolitis was present in 80 per cent of the cases. In 25 per cent of the cases there had been symptoms of appendicitis which had necessitated operation in some of these cases. The attacks of vomiting did not, however, cease with the removal of the appendix in all of the operated cases. In the discussion which followed, Richardiére

insisted that under the name of cyclic vomiting different clinical entities are grouped. He believed that while appendicitis would explain some of these cases it cannot be the casual factor in all. In addition to appendiceal vomiting he holds that there is also a hepatic form and an enterocolitic form. Marfan held that in subjects predisposed to cyclic vomiting, almost anything may be the exciting cause of the attack. Thus the acute infections may cause attacks of this sort or even the eruption of the teeth. He did not believe that the relation of appendicitis and cyclic vomiting can be considered as very close.

CONGENITAL MALARIA.—Pezopoulos and Cardamatis (*Arch. de Med. des Enf.*, January, 1907), had the opportunity of studying six cases in which the mother at the time of confinement was suffering with malaria. In all of six cases the maternal blood showed the malarial parasite. In the blood of the newly-born in four cases, and of the foetus, in the two cases of abortion, (the examinations being made within a few hours after delivery) no malaria parasites were to be found. Neither were there any parasites in the blood of the liver or of the spleen in either foetus examined. In five cases the placental blood was carefully examined. In blood from the maternal surface of the placenta, parasites were abundant, no parasites of this sort being found on the fetal surface. Neither were any parasites found in the blood of the umbilical cord.

ACUTE LOBAR PNEUMONIA IN CHILDHOOD.—Hayem (*These de Paris*, 1906); studied fifty-one cases of lobar pneumonia in childhood (all terminating in recovery). From these studies the author concludes that lobar pneumonia in childhood is like that in the adult. Diagnosis is, however, often difficult, owing to two factors: First, the late appearance of the physical signs, the pneumonia being central and not coming to the surface until near the end of the attack. Second, the predominance of the nervous phenomena. The prognosis is favorable, and there is no occasion for very active medication. Attention to the general hygiene and expectant treatment will be sufficient. The employment of drugs is not indicated except in grave, or complicated cases.

CONCERNING THE DEVELOPMENT OF ECLAMPTIC INFANTS IN LATER CHILDHOOD.—Thiemich and Birk (*Jahrb. f. Kinderheilk.*, Jan. and Feb., 1907).—As the result of their study of the literature and of a series of personal investigations, the authors have reached the following conclusions concerning eclampsia in early childhood.

Up to the present time pathological anatomy has not afforded any basis for the definite explanation of eclampsia. For the present we must consider it a functional disorder in view of the absence of organic changes. Eclamptic nurslings show themselves in most cases as abnormal individuals in later childhood. The duration of the disease, the number of attacks, and of the relapses do not stand in casual relation to the later abnormality. It would appear from the studies of the authors that heredity plays a most important role in this condition. Comparing eclampsia with epilepsy it would appear that while in epilepsy heredity plays an important role also, the epileptic ascendancy is not of etiological

importance with reference to eclampsia. With reference to the direct heredity it would appear that neuropathy in its various forms is an important factor, and it would therefore seem possible to explain eclampsia on the basis of an intrauterine brain lesion.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

DEMENTIA PRAECOX.—Macpherson (*Rev. Neurology Psych.*, March, 1907).—In this article the author attempts to lay before the reader a concise account of the present position of dementia præcox. In this attempt he has succeeded so well that a more than usually extended abstract will be given in order to place the question clearly before the readers of this journal. In the first place the term itself has aroused a good deal of objection on the ground that dementia in its English significance, connotes an incurable state and a certain per cent. of these cases do get well. We should remember that Kraepelin who introduced the study of this disease to the medical world and has done more than anyone else to further its expansion, is a German and the term dementia in German is "Blodsinn," which has none of the suggestion of incurability that dementia carries. The author calls attention to the fact that if we were less inclined to quarrel with terms and more inclined to study the actual literature of the disease, especially from the papers of Kraepelin himself, we would be in a better position to understand the disease than we are. The clinical entity, dementia præcox embraces three subforms: Hebephrenia, katatonia, and dementia paranoides. If it is found that this is a real clinical entity, then the most important advance in recent psychiatry has been achieved. There are certain features that are peculiar to all three forms. These may be termed basic symptoms. 1. Stupid listlessness, with a perfect knowledge of surroundings. 2. The sensory sphere is liable to grave implications which often commence with dream perceptions. Hallucinations of the senses occasionally accompany the whole course of the disease. 3. The consciousness of the patient remains as a rule perfectly clear. 4. Memory is proportionately but little disturbed. 5. Sooner or later the thought processes of the patient undergo deterioration. 6. The judgment of the patients is almost always affected. 7. Inasmuch as they are unable to realize fully that it is they themselves and not their surroundings which are affected, delusions of a fleeting or lasting nature are apt to arise. In the early stages of the disease the delusions are sad or hypochondriacal. Later grandiose ideas begin to appear which may gradually become dominant. As a general rule owing to the rapidly developing mental weakness, all forms of delusions exhibit a nonsensical, quixotic stamp. The tendency is for all the delusions, even those that are of a fixed sort found in the paranoid form to finally disappear. 8. The mental disposition undergoes marked change. 9. The behavior of the patients adds importantly

to the clinical picture. They lose all power of initiative and neglect their work and their obligations. Along with this loss of initiative there is displayed passing or lasting impulses toward suicide. 10. To the affection of the will power coupled with the prevalence of automatic impulses is attributed that peculiar negativity which manifests itself as an obstinate opposition to every change of position to taking food, putting on clothes, etc. 11. The working capacity of the patient is without exception lowered and may be seriously affected. In addition to these mental symptoms there are a number of bodily symptoms which are commonly met with, but in themselves are not especially characteristic. These symptoms refer to the bodily functions, weight, sleep, heart action, etc. Kraepelin defines the three subdivisions of dementia præcox in this way. By hebephrenia is meant all those forms of dementia præcox in which a uniform more or less profound condition of mental weakness is developed under the accompanying influence of subacute more seldom of acute mental disturbances. Katatonia is essentially a peculiar disease process progressing through stupor or excitement to a condition of dementia with intercurrent symptoms of negativism, stereotypism and autosuggestibility in the spheres of action and work. Dementia paranoides includes a group of cases in which delusions and hallucinations are produced in an otherwise clear mind throughout many years of a steadily advancing mental weakness. That these divisions are largely artificial is admitted by Kraepelin. There can be no rigid line of demarcation between them, because the cases run into each other and overlap continuously. The author in concluding summarises Kraepelin's service to psychiatry somewhat in this fashion: Kraepelin has furnished thoughtful physicians with a means of expressing to one another empirical impressions in regard to a certain group of cases which before this was relegated to an indefinite series according to each man's individual idea. Out of a group of indefinite cases Kraepelin selects some about fifteen per cent. of the admissions to his clinic and predicates certain things about them. These patients were previously unattached; they now belong to a pretty well defined group which has become a definite object of study the world over. To this group the name of dementia præcox has been given. The name itself is not important, but the idea advanced is one of the most important advances in psychiatry. Kraepelin himself admits that his idea is only tentative except in the matter of diagnosis and prognosis, nevertheless leading alienists in both continents have accepted his presentation as a simple workable advance, the outcome of genius and of incalculable patient observation.

HYDROCEPHALUS COMPLICATING EPIDEMIC CEREBRO-SPINAL MENINGITIS.—Koplik (*Am. Jl. Med. Scs.*, April, 1907).—In this paper Koplik draws attention to the fact that in certain cases of epidemic cerebro-spinal meningitis there occurs early in the disease a condition of acute distension of the ventricles which can be diagnosed. An early recognition of the presence of this condition and the appropriate treatment directed to it, is a means, according to the author of saving the life of the patient. Lumbar puncture is of course the method of treatment to be resorted to. A number of cases are described in order to illustrate the

mode of onset and the clinical symptoms. The symptoms of acute distension of the ventricles are those of a suddenly developing increase of pressure in the cavities of the brain and in the meningeal spaces of the cord. The pulse becomes very rapid, irregular and weak, labored and sighing respiration, dilated pupils. Percussion of the skull shows a bilateral tympanitic note. After spinal puncture the conditions showed marked improvement. The author refers to two other varieties of hydrocephalus occurring in the course of cerbero-spinal meningitis; the first of these occurs in infants below two years of age. This form attacks the structures at the base of the brain in the posterior part of the skull. The second form occurs at any time in the course of the disease after the first two weeks. The patients are usually doing pretty well when they gradually become unconscious, vomiting takes place and an increase of rigidity and a slight increase in the tympanitic note. In conclusion the author gives the following as his position on the question of lumbar puncture in cerebro-spinal meningitis. It is important enough to quote in full: "I resort to lumbar puncture only in the outset of the disease, or in its course when I am convinced that there is an accumulation of fluid in the ventricles; unless the signs which I have detailed in this paper are present, irrespective of headache, delirium or high temperature, I do not puncture. I feel that such cases are not benefited by puncture, although I have punctured many simply to convince myself that everything available in human knowledge has been offered to the patient."

THE LIMITATION OF THE TERM HYSTERIA. WITH A CONSIDERATION OF THE NATURE OF HYSTERIA AND CERTAIN ALLIED PSYCHOSES.—Dana (*Jl. of Abnor. Psychol.*, No. 6, 1907).—This is an attempt to consider all the data of hysteria for the purpose of determining in a general way just what is meant in a clinical sense by the term. A certain clinical group of symptoms can be very well and sharply characterized both by acedemic definition and clinical description. This paper is to be welcomed in view of the recent attempt on the part of Babinski and others to limit the use of the term hysteria to such cases as represent merely a group of symptoms which respond to certain therapeutic tests of a psychical nature. The aim of Dana's paper is to represent the clinical picture of hysteria as it comes to the physician, and this is practically always recognizable. It is rather a rare malady. It occurs in men as often as in women. Its characters are very striking, and its diagnosis is as free from any possibility of question as is a case of advanced tabes or general paralysis. We make this diagnosis, not from any knowledge of the disintegration of the person's personality, but because of the objective tests to which he reacts. We do not ask whether the excitation of his personality was endogenous, as in psychasthenia, or whether it was exogenous. We do not have to say a word about the patho-psychological state in teaching medical students how to recognize the malady. As an illustration of this contention the author gives a clinical description of a typical case of hysteria. In conclusion, the author gives this very suggestive classification of the psychoneuroses: 1. Hysteria proper or major. 2. Psychasthenia. 3. Psychasthenia with obsessions, doubts and fears

and impulsions, including some forms of dipsomania. 4. Neurasthenia simple and symptomatic. 5. Abortive types of the major psychoses, such as melancholia dementia. Hysterical episodes occur in all the psychoneuroses, and are simply the expression of the way the individual reacts, or may react, being, constitutionally, unstable.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

A SUCCESSFUL CASE OF TRANSPLANTATION OF THE CORNEA.—Zirm (*Graefe's Arch. f. Ophthalm.* LXIV 3).—This case deserves widespread recognition, as it is the first authentic instance in which the transparency of the transplanted corneal button has been maintained for several months. In this patient both corneæ had become entirely opaque following the entrance of unslaked lime into the eyes. Vision was reduced to "movement of hand." Zirm operated as follows: With a v. Hippel trephine a disk was removed from the periphery of a freshly enucleated child's eye, and transplanted to a gap in the leukomatous cornea. A bridge of conjunctiva was drawn across it and stitched over. This operation was not a success. At the same time another disk was removed from the centre of the cornea of the enucleated eye, immediately wrapped in gauze squeezed out of warm salt solution and kept moist and warm in a stream of aqueous vapor. A disk was then removed from the patient's other cornea and the corresponding piece of clear cornea inserted in its place, care being taken to touch it with no instrument from the beginning of the operation to the end. To retain the patch, which fitted perfectly, Zirm inserted two stitches in the conjunctiva, making a St. Andrew cross of thread over the centre of the flap. Eight months later the cornea itself was opaque, whitish and intersected superficially with branching vessels. The graft, however, had none of these and at its margin was sharply differentiated from the cornea by a tendinous looking ring. With the exception of two very short fine lines of opacity within the ring the graft was quite transparent. The eye could be examined with the ophthalmoscope and the disk inspected. Vision=5-20; with a convex lens 3-20, and J. 13. Zirm believes the following factors contributed to his success: 1. The graft was an exact fit for the place in which it was laid, and was not damaged by handling with forceps or other instruments. 2. The graft was taken from the eye of a healthy boy of 11 years. 3. The existence of superficial conjunctival vessels ramifying over the surface of the cornea tended to keep alive the superficial parts of the graft. In some future case, Zirm suggests that the actual operation might, with advantage, be preceded by such preparation as this: Some few weeks before operation, he would mark out the part to be excised from the flat scar by a light touch with the trephine, then he would "raw" all the surrounding area superficially right up to the limbus, and by means of stitches bring the loosened membrane right across the future gap. When the consequent irritation

had gone down, he would proceed to the actual operation confident that the above procedure had prepared the way and had provided the needed increase in superficial vascularity and in tissue metabolism which is a requisite of success.

CENTRAL SCOTOMA IN CONGENITAL AMBLYOPIA AND ITS RELATION TO PARTURITION.—Scrini and Fortin (*Arch. d'Ophtalm* November, 1906).—This paper is an effort to place the pathology of congenital squint and amblyopia on a scientific basis.

Congenital amblyopia is characterized by the absence of diplopia and of precise fixation and by a considerable diminution of visual acuity which is generally confined to the macular region. The presence of a central scotoma prevents the eye from fixing a small object precisely and the absence of fixation in an eye is presumptive evidence of the presence of a central scotoma. This scotoma varies much in size, is usually relative, but may be absolute. The deficiency of vision is not regulated by the extent of the scotoma. The authors found central scotoma in fifteen out of sixteen cases where vision was reduced below 1-10. There is strong presumptive evidence that the central scotoma in these cases is related to central retinal hemorrhages at birth. It has been shown that these hemorrhages are related to the duration, difficulty and complications of labor and delivery. They are never seen in the eyes of infants born prematurely, but are common in prolonged and difficult labor, especially when the circulation of blood in the head has been obstructed or forceps have been used. Scrini has found that concomitant convergent squint is more frequent among children of primiparæ than among those of multiparæ, and that the number of cases of strabismus is closely related to the duration and difficulty of labor and delivery.

OPTICO-CILIARY NEURECTOMY.—Elliott (*Indian Medical Gazette*, November, 1906).—In the not rare instances when a patient declines to part with a useless and painful eye Elliott recommends optico-ciliary neurectomy. The two great difficulties are to catch the nerve and to deal with the hemorrhage which is often very considerable. For the avoidance of the first, he has devised a peculiar hook with a double curve which, after division of the internal rectus, is slipped alongside the globe and made to hitch upon the nerve. Scissors curved on the flat are passed along the convexity of the hook and the nerve divided on the proximal side. By means of the hook the globe can be rotated till the stump is visible, which is then cut short off close to the sclera. The hemorrhage, which is great, cannot well be avoided.

AN ELECTRIC HEATER FOR THE EYE.—Hoffman (*Klin. Monatsch f. Augenh.*, October, 1906).—Hoffman describes a new form of electric heater, consisting of an asbestos plate of suitable form to fit the eye and which can be enclosed in a clean washable linen cover. In the circuit is introduced a dark blue resistance lamp by means of which the heat can be kept at the required standard.

LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OF

WM. E. SAUER, M. D.

THE RELATION OF THE TONSIL TO INFECTION AND INFECTIOUS DISEASES.—Brown (*Medical Record*, March 2, 1907).—The author, in a lengthy article, calls attention to certain facts which show a close relationship between the tonsil and certain infectious diseases. He believes that the physiological function of the tonsil is to resist disease, dwelling at length on the Metchnikoff theory of phagocytosis, believing that a marked phagocytic reaction takes place in the tonsil when exposed to infection. He states that in scarlet fever we have many examples of phagocytic action in the tonsil; children exposed to scarlet fever develop tonsillitis, and their parents and nurses develop tonsillitis, but no seated scarlet fever. Rheumatism is so frequently preceded by tonsillitis that the author questions the possibility of there being a specific germ for rheumatism. German observers have produced symptoms of rheumatism in rabbits by inoculating them with the exudation of tonsillitis. In a series of 120 cases of tonsillitis treated by Kiefer, 60 were treated in the ordinary way, and 60 were treated by local applications of acetic salicylate. The first 60 were followed by nine cases of articular rheumatism, while the second 60 were not followed by a single case of rheumatism. Lacunar tonsillitis also occurs in measles, erysipelas, smallpox, plague, etc. His conclusions are: That the tonsil is anatomically admirably arranged to resist infection; that it is continually exposed to the action of pathogenic germs; that inflammation of the tonsil is caused by a pathogenic germ trying to enter, and the inflammation is a defensive reaction; that finally the relation of the tonsil to infection and infectious diseases is one of protection and the lacunar tonsillitis is an example of phagocytosis, and is a defensive reaction.

AURAL AFFECTIONS IN RELATION TO MENTAL DISTURBANCES.—Bryant (*N. Y. Med. Journal*, March 23, 1907).—With respect to mental affections, aural diseases are divided by the author into six categories: 1. Those cases which bear no relation to mental disturbances. In the psychically weak the auditory disturbances may be so mild that they have no bearing on the mental condition, while some mental states are apparently oblivious to peripheral stimuli. 2. Cases of aural diseases causing mental irritation and leading to psychical affections, the result of septic intoxication, or of pain, or of subjective and objective irritation of the hearing apparatus. These sensations furnish the base for imaginary sounds and give rise to hallucinations. 3. Disturbances of the ear which act as causes of general exhaustion and hasten the psychic symptoms. External sounds, and especially internal and subjective sounds are very troublesome, while earache is a pain which is peculiarly irritating to the mental functions, and the resulting exasperation and exhaustion may be extreme, leading to dementia and suicide. 4. Diseases of the ear which progress to loss of hearing, destroying the connection with the

outside world and thus upsetting the mental equilibrium. Sounds have more effect on our minds than sight, and the inability to relegate a subjective sound to its proper place allows it to affect the imagination and emphasize psychical defects. 5. Hallucinations of hearing, which are caused by the subjective sensation of a disturbed organ of hearing falling upon deranged higher centers. An important point to be noted is the prevalence of chronic middle ear catarrh, among patients of this kind. 6. Affections of the ear which are secondary to the mental disturbances. In certain forms of psychosis the vital functions are affected, reacting upon the entire organism, and disturbing the functions of the various organs. The author concludes by saying, that ear disease is much more prevalent among the insane than among the sane, having found it in 90 per cent of the insane examined.

A NEW METHOD OF OPERATING UPON TURBINAL HYPERTROPHIES WITH A DESCRIPTION OF THE INSTRUMENTS AND THE TECHNIC OF THE INTRANASAL SUTURE.—Yankauer (*Laryngoscope*, Feb., 1907).—In the author's method of operating upon turbinal hypertrophies, the principle is the same as in other operations; asepsis, suturing of the wound and healing by first intention, if possible. The author has, accordingly, devised and perfected a method of sewing up an intranasal wound, and has succeeded in demonstrating that primary union may be obtained in our operations upon the turbinal bodies, if we suture the wound after the excision of the hypertrophied parts. The operation consists of two stages: 1. The excision of the hypertrophied tissue. 2. The suture of the wound. After the use of cocaine and adrenalin, an incision is made with a knife above and another below the hypertrophy, the two incisions meeting at a sharp angle in front and behind. The included mass is then dissected out with elevators and scissors. Enough of the bone is then removed with punch forceps to bring the edges of the wound together. The edges of the wound are brought together with number 0 sterilized catgut, and the sutures are placed about one-fourth inch apart, beginning posteriorly and working forward. The nose is then packed with spunk, impregnated with aristol and allowed to remain forty-eight hours. For passing and tying the suture, three instruments, which the author has devised, are necessary; a needle with a curved point at right angles to the shank, for introducing the suture; a hook for pulling the suture through, and a suture-closer. Sometimes a crotch forceps for steadying the mucous membrane, is necessary. The author has tried this method a number of times and has been eminently successful; healing and the formation of mucous membrane is usually complete in one week.

THE IMPORTANCE OF AN EARLY DIAGNOSIS OF MALIGNANCY OF THE LARYNX.—Stein (*Transactions of the American Academy of Ophthalmology and Oto-Laryngology*, 1906.)—The author, in a lengthy article, dwells with emphasis upon the importance of an early diagnosis in malignancy of the larynx, and the necessity of an early radical removal; and also upon the method of operative procedure to be selected in a given case.

With regard to the early diagnosis, the author states that every case

of chronic hoarseness, especially if unaccompanied by cough, should be regarded as suspicious, and carefully watched. He says that on account of the frequency of hoarseness as a symptom of many varieties of laryngeal disease, its significance is liable to be disregarded until too late to do anything to save the patient's life. The hoarseness, the result of beginning malignancy, may result in one case from incomplete apposition of the vocal cords on phonation, owing to the situation of a neoplasm or infiltration along the margin; in another case, it may result from the infiltration, impeding the motion of the cords; in still another case, it may be due to the cord being robbed of its finer vibrations on account of the thickening; in any case, chronic hoarseness, for which no definite cause can be determined, should be placed under the closest surveillance and examined repeatedly. Infiltration, the author considers, a very important symptom in beginning malignancy, and though it may be too deep to be seen, pressure on nerves may cause a lagging on the part of the cord during phonation, and should arouse suspicion. If these cases of chronic hoarseness were more carefully watched, we would have to depend less upon the microscope, which is often misleading, due to insufficient removal of tissue, or incompetent examination of the same.

The author considers the external method of operation as being the preferable one, stating that it is impossible to remove sufficient tissue by the internal method, especially if the tissue originates from the interarytenoid space, the esophageal side of the larynx, the epiglottis and the aryepiglottic fold.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

M. F. ENGMAN, M. D.

THE TREATMENT OF EPITHELIOMA OF THE SKIN.—Bizard (*Progres Medicales*, Feb. 9, 1907).—The writer defines epithelioma, a cutaneous cancrroid, as the result of the proliferation of the epithelial tissues of the skin. He sums up the treatment under the following headings: Surgical, radio-therapeutic, treatment by cauterization, internal treatment and external treatment. He says that radio-therapy has the immense advantage of being easily applied, and is not painful, and the esthetic results are possibly more satisfactory. The cicatrix obtained is soft, supple and is the least visible. Especially around the angles and commissures of the face is the x-ray preferable. In other words, radio-therapy is the most elegant of all the methods of treatment. However, it is often dangerous, in that the dosage is not accurate. For the cautery treatment, he recommends the usual arsenical paste, applied in the usual manner.

THE CAUSE OF COMMON BALDNESS.—Parker (*Med. Record*, Feb. 23, 1907).—This report is a very unique investigation into the cause of common baldness. The writer divides the condition of baldness rather clumsily into several classes. He attributes the fundamental cause of common

baldness to a form of respiration that leaves residual air undisturbed in the air cavities of a portion of the lungs; or, to be more explicit, since the residual air of any portion of the lungs that is not made use of for breathing purposes must necessarily lie undisturbed, and since the function of respiration can be carried on without the upper portions of the lungs being utilized, but cannot be carried on without the lower portions being used, the fundamental cause of common baldness is absence of upper chest breathing. The connection between absence of upper chest breathing and the existence of baldness is explained in the following manner. In the first place, attention is directed to the circumstance that residual air is warm, that it is saturated with moisture, that in amount it is five times greater than the tidal air, and that it contains among its constituents oxygen, nitrogen, carbon dioxide, argon and organic matter. Attention is also directed to the fact that whenever residual air is kept chambered in the presence of warmth and moisture, it invariably undergoes change and develops a soluble poison that is capable, when present in the blood, of exerting a disturbing effect upon hair growth. That the poisonous substance circulating in the blood should limit its destructive action to the hair on the top of the head, is explained by the statement that the roots of the hair in this region, by reason of lying over the hard, glistening and practically bloodless occipito-frontal aponeurosis, are deprived of the nourishment that the other portions of the hair region obtain.

The conclusion of the author from his exhaustive studies and animal experiments are as follows: That the evidence submitted in the support of the theory that absence of upper chest breathing is the fundamental cause of common baldness, cannot yet be said to be complete. Its real value has not been demonstrated to be that of its face value. Before its real and face values can be said to correspond, the evidence must be vouched for by many times more than one person. The writer has isolated the specific poison obtained from the upper chest-wall, and has called it trichotoxin.

THE PRESENT STATE OF THE TREATMENT OF LUPUS VULGARIS.—Willmott (*Brit. Jour. of Dermat.*, Feb., 1907).—For the purpose of forming a comparative estimate of the values of the various methods of treatment of lupus, it is convenient to classify them, and it seems to the writer that the following classification is the most convenient: (1) the application of caustics and scarification; (2) scraping, with or without the application of caustics; (3) excision; (4) actinic treatment; (5) opsonic treatment. An important point in estimating the value of all the forms of treatment of lupus is the fact that, although the disease may be symptomatically apparently cured, slight injury will often cause the reawakening of it. This is true of tuberculosis of any portion of the body. Spores may have been left behind, or a small tuberculous mass may have been encapsulated, and thus renewal of the disease may occur, even after the lupus has been apparently cured.

The most thorough, and probably the method giving the best results, is the complete and wide excision of the involved area. This can

easily be done when the disease is not located upon the face, but in this region it is not often practicable. The Finsen method is probably the best where the disease occurs upon the face, as in this region thorough scraping and excision cannot be performed. The writer does not endorse treatment by the high-frequency current. With radium, he has had no experience. He has been unable to distinguish between the scars made by the x-ray and the Finsen method, but some have claimed that the latter is thinner and softer than the former. The x-rays he considers more rapid in action than the Finsen method, and a larger area can be treated at one time, and he believes that the recurrence is more common after the Finsen method than after the x-rays. There is, however, more danger with the x-ray than with the Finsen method. The value of the injection of tuberculin T. R., guarded by the estimation of the opsonic index, is now acknowledged, and this method of treatment is especially indicated in cases where the tendency to recurrence is great and the area large. While the writer recognizes fully its value, he thinks the cases suitable for it are limited, and even when it seems to be the best method, the x-rays form a useful adjunct.

To sum up, for the non-exposed parts of the body, complete excision is far the best method, though in a few cases, scraping followed by an efficient caustic will suffice. For the face and neck, the x-rays and the Finsen light are the most convenient and effective methods of treatment. The opsonic treatment is especially useful in cases where the tendency to recurrence is great, or the predisposition to tubercle is intense.

PEMPHIGUS VEGETANS: REPORT OF A CASE WITH A REVIEW OF THE SUBJECT.—Winfield (*Jour. of Cutan. Dis.* Feb., 1907).—In preparing this paper, the writer has had access to the whole literature of the subject, with the exception of five or six reports. He has stated and carefully analyzed the subject back to 1876, and he thinks that the reporters in many instances have been in error in the classification of their cases. He has found fifty-eight undoubted cases. A brief analysis of these may be reported as follows:

The ages were given in forty-five out of fifty-seven, 24 years being the youngest, 67 the oldest. Six patients were between 20 and 30 years of age, sixteen between 30 and 40, sixteen between 40 and 50, six between 50 and 60, and five between 60 and 70, demonstrating the fact that the disease occurs more frequently between the ages of 30 and 50, or, more correctly, between the 35th and 45th years. Females are more subject to the disease than males. The throat, mouth and nose were the parts first affected in thirty-six cases; the genitals, inguinal region and lower abdomen in ten; nails in six; axillae in four; face in three, and urethra in one. From the study of the literature, the author thinks it is safe to conclude, first, that some of the reported cases are not true examples of pemphigus vegetans; second, that pemphigus vegetans is a distinct disease, and not related etiologically to the diseases commonly known as pemphigus; third, that pemphigus vegetans is an infectious disease, running a definite course; fourth, that the producing organism is not yet determined; fifth, that this organism gains entrance into the body through the mucous orifices and

abrasions; sixth, that pathological changes in the kidney, as evidenced by urine analysis and pathological findings, are not etiologically significant, but secondary.

THE PRESENCE OF SPIROCHETE IN THE NERVES OF THE PREPUCE IN THE COURSE OF SYPHILITIC CHANCER.—Ehrmann (*Annal. de Derm. et de Syphil.*, Jan., 1907).—A number of observers have found spirochæte in the interstices of connective tissue and of the blood-vessels. Ehrmann was the first to have seen them in the lymphatic canals. He has searched with a great deal of work a number of times to find them in the ramifications of the nerves of the skin and subcutaneous tissues, and has succeeded in two cases of chancre of the prepuce. They lie solely in the connective tissue of the nerve and in the little lymphatic space about the nerve. It is very probable that the spirochæte thus gaining access to the tissues of the nerve, prepares the way for the later manifestations of the so-called parasymphiles, which would thus explain the occurrence of tabes with syphilis.

MEDICAL LAW AND MEDICAL JURISPRUDENCE.

IN CHARGE OF

IRVIN V. BARTH, LL. B.

SCIENTIFIC BOOKS AS EVIDENCE.—State vs. Wilhite, (*Supreme Court of Iowa*, Nov. 4, 1906,) 109 N. W. 730.—In a prosecution for practicing medicine without a license, it became material to ascertain the definition of certain medical terms. A standard medical dictionary was offered in evidence. Upon this point the Court said: "Dr. Kime testified that 'Dunglison's Medical Dictionary, Revised Edition,' is accepted by the medical profession as authority in the definition of words, and thereupon the definitions of 'anatomy,' 'neurology,' 'ophthalmology,' 'pathology,' and 'physiology' contained therein were introduced in evidence over defendant's objection. Even though the Court might have taken judicial notice of the meaning of these words, it was not error to receive a standard medical dictionary in evidence, as an aid to the memory and understanding of the Court." Thereupon, commenting upon certain cases as not being in point, the Court, in referring to these, further said: "They hold that medical works, treating of the symptoms and cure of disease are not admissible, not that standard authorities may not be received as proof of the meaning of medical terms."

Note.—The cases thus differentiated by the Court in the principal case suggest a mooted question as to whether or not standard authorities, text-books on medicine and surgery, are themselves admissible as independent evidence to be read to the jury. There can be no doubt that the weight of authority is opposed to their admissibility as suggested by the Court in the principal case. It has even been held by respectable authority that a witness may not read from his own works to support his testimony. And while a witness may not testify as to statements made in medical books,

he may corroborate his testimony by evidence that his position is sustained by writers and authorities on the subject. The expert may refresh his knowledge by referring to standard works, but the evidence must be his own, independent of those works. He is not to be confined to opinions derived from his own observation and experience—he may even refer to cases on record, without them, to support his opinion.

A reason for excluding standard authorities as evidence in themselves, suggested by a California court, is that medicine is not to be considered as an exact science, but rather as an inductive science based on data subject to change from time to time. On the other hand, the few cases which hold such evidence admissible declare that the opinion of an author as to the contents of his works is better evidence than the mere statement of an opinion by a witness testifying to his recollection of them from former reading.

This last view scarcely seems sound when we consider that the living witness may testify not only from what he has gleaned from study, but as well from observation and experience. Furthermore, just as he may corroborate his own testimony by relying upon standard authorities so, too, is he a subject for cross-examination, so that in the ultimate his knowledge may be thoroughly tested.

And it may be added here that upon cross-examination the right to read extracts from standard treatises is greatly increased. In dealing with the expert himself, he may be asked upon his cross-examination as to questions framed by the use of quotations from standard treatises, and he may be asked as to the relative weight of different authorities, or what is the position of authorities on the particular subject in hand. This, it has been said, is to test the expert's accuracy, his learning and the weight to be given to his testimony, or to make the question clearly intelligible to the witness." But the extracts should be limited to the purpose of testing the competency of the expert as a witness and the value of his opinion.

ABSENCE OF CONSENT TO OPERATION.—*Pratt vs. Davis (Supreme Court of Illinois, Dec. 22, 1906), 79 N. E. 562.*—Action for trespass on the person in the sum of \$3,000.00. It was admitted by defendant that he did not have the consent of the wife to the operation, for performing which suit was brought, but contended that the wife was of unsound mind and that he secured the husband's consent upon the following state of facts: The husband placed his wife in a sanitarium for treatment. The defendant, who was the physician in charge, told him that a proposed operation on her would be a trifling one. The husband was willing that the defendant should do anything he thought necessary, but he requested that he should do as little as possible. The defendant told the husband that two operations might be necessary. Following the conversation the defendant performed an operation, and the wife left the sanitarium. She was subsequently returned and defendant performed a second operation. The Court held that the authority given by the husband to the defendant to perform an operation was exhausted when the first operation was performed, and the second operation was performed without consent.

The Court, in the course of its opinion, made the following observation in regard to the surgeon's rights and duties as to securing consent generally: "Where the patient desires or consents that an operation be performed, and unexpected conditions develop or are discovered in the course of the operation, it is the duty of the surgeon in dealing with these conditions to act on his own discretion, making the highest use of his skill and ability to meet the exigencies which confront him, and in the nature of things he must frequently do this without consultation or conference with any one, except, perhaps, other members of his profession who are assisting him. Emergencies arise, and when a surgeon is called it is sometimes found that some action must be taken immediately for the preservation of the life or health of the patient, where it is impracticable to obtain the consent of the ailing or injured one, or of any one authorized to speak for him. In such event the surgeon may lawfully, and it is his duty, to perform such operation as good surgery demands, without such consent. The case before us, however, does not fall within either of these two classes."

Note: The case is interesting when considered in connection with the matter discussed in Volume 13, Number 9, September, 1906, at pages 764-5 of this journal.

SOCIETY PROCEEDINGS.

ST. LOUIS SURGICAL CLUB.

Meeting of December 12, 1906.

RENAL CALCULUS.

Dr. W. M. Robertson read a paper with this title for which see page 443.

DISCUSSION.

Dr. Reder had operated on four cases on the strength of an excellent clinical picture such as we would expect in a patient suffering from renal calculus, but only in one case had he found a stone. The symptoms in the other three cases, however, disappeared and the patients made a good recovery. In these cases a partial decapsulation was done to relieve the intensely congested condition of the kidney. He agreed with the statement made recently by a surgeon that he would not operate on a patient giving a clinical picture of kidney stone unless it could be verified by a skiagraph. He stated that on several occasions a severe renal colic was relieved with a large hypodermic injection of morphine, or chloroform by inhalation, with excellent results.

Dr. Elbrecht asked Dr. Clopton to enlighten him on the subject of the skiagraph as a diagnostic agent, as this was, perhaps, the most difficult field in the skiagraphic work.

Dr. Clopton said he had failed only once in getting the picture of a stone shown by other methods to be present. That was one of those soft stones that blocked the ureter, and was afterwards passed. He had taken about seventy-five pictures of cases supposed to have renal calculi. In almost all he had been able to get a definite shadow of the transverse processes, and to show the outlines, and sometimes an outline of the kidney. If these shadows are shown, and there is no shadow of stone on the plate a negative diagnosis is pretty safe. It is not possible in every case to have your tube regulated just right. It may be too high and wipe out your shadows, or too low and not penetrate enough; consequently you sometimes take two or three pictures before getting one that is satisfactory. Those who are skillful in technic can, in all hard stones, get a shadow if they try long enough, but a great many stumbling blocks may be encountered. A very large, fleshy person with a great deal of fat will raise the area of the kidney so far from the plate that the light, no matter how well regulated, will cast an indistinct picture of a calculus. A small stone six inches from the plate, with your light eighteen, twenty-two or twenty-six inches away, will sometimes appear to be half an inch to an inch broad.

Dr. Deutsch mentioned a case seen with Dr. Robertson, in which the cystoscope could not be used. Operation disclosed a large mulberry calculus in the pelvis of the kidney. The question of drainage or no drainage was discussed, but finally the entire wound was sewed up and the patient made a good recovery.

Dr. John Young Brown was glad to hear Dr. Robinson sound a note of warning relative to the use of the cystoscope. In selected cases the cystoscope is a great advantage, but it is not without danger. He said gratifying advances have been made in skiagraphic diagnosis of these conditions, and he had verified x-ray findings on many occasions. He was confident that the essayist voiced the

sentiment of the large majority of surgeons concerning the use of the cystoscope. The instrument is one of great value, but it is right that we warn against its use, except in selected cases.

Dr. Kirchner said the work at the hospital had caused him to realize more than ever the importance of hysteria and certain symptoms which neurasthenics present. It had happened more than once that patients presented the clinical picture of stone in the kidney or ureter, whereas the condition was hysterical. In all these cases careful urinary examination is of greatest importance.

Dr. Elbrecht described a case which demonstrated the need of more symptoms, and in which the x-ray might have been a great aid. He shared the views of the essayist that blood in the urine is one of the most constant and reliable symptoms for diagnosis.

Dr. Clopton exhibited a radiograph picturing a condition which produced no symptoms, or symptoms so slight and indefinite that a correct diagnosis could not be made. The radiograph showed a number of stones in the kidney. He mentioned another obscure case with a fatal issue, the patient being too weak to bear an operation. In the kidney specimen exhibited the ureter was seen blocked by a single small stone.

Dr. Robertson, in closing, emphasized the importance of careful examination and the lack of appreciation shown by some men in the application of the x-ray and of the cystoscope. He said he had been asked to catheterize ureters, when the only indication for doing so was cloudy urine, no effort having been made to determine even the character of the cloudiness. The use of the cystoscope in cases of this kind brings both the instrument and the operator into bad repute. To use it intelligently, and to properly interpret his findings, the operator should be given the opportunity of examining the patient and studying the mixed urine. He should be consulted as to the advisability of its use, and given every opportunity to interpret the significance of his findings. He protested strongly against mechanical diagnosis. As soon as we find something wrong with the urine, we should not at once resort to the cystoscope and the x-ray, but should proceed along the old orthodox way, and reserve these newer methods of diagnosis as a last resort. They have in no way replaced the older methods of examination, but should be considered as additional aids in arriving at a correct diagnosis. If used together, and the findings intelligently interpreted, we will find more renal calculi than we ever thought existed.

BOOK REVIEWS.

LES ALIMENTS USUELS, COMPOSITION, PREPARATION; INDICATIONS DANS LES REGIMES. Par Alfred Martinet. 8vo., pp. viii+328. Paris, Masson & Cie., 1907.

This volume is a companion to the author's *Les Medicaments Usuels*. He discusses each food-stuff from the point of view of the kitchen, the bed-side and the laboratory. The most useful feature of the book, perhaps, lies in the detailed description of the methods of preparing palatable dishes to meet all the various indications. It is a cook book as well as one on dietetics and well deserves translation.

DIAGNOSE UND THERAPIE DER ANAEMIEN. VON DR. JOSEPH ARNETH. 8vo., pp. 208. Wuerzburg. A. Stuber's Verlag (Curt Kabitzsch), 1907.

This is one of the most interesting treatises on hematology that has recently appeared. The various anemias, including the leucemias, are discussed with much originality from the diagnostic as well as from the therapeutic point of view. The author's favorite doctrine is that the stage of maturity of a polymorphonuclear leucocyte may be estimated from the complexity of its nucleus. The greater the proportion of granulated cells with simple nuclei (i. e., with 1, 2 or 3 branches), the greater the energy or even haste with which the hemo-poetic tissues are working. While the writer can hardly be said to have established this theory, he certainly renders it plausible and draws many interesting conclusions regarding the significance of the blood-picture in disease. The colored illustrations are unusually fine and the treatise will well repay perusal.

BEITRAEGE ZUT KLINIK DER TUBERCULOSE, HERAUSGEGEBEN VON DR. LUDOLPH BRAUER. Bd. vi. Wuerzburg. A. Stuber's Verlag (Curt Kabitzsch), 1906.

This periodical should be in the hands of every one who takes especial interest in questions involving tuberculosis, particularly from the point of view of the laboratory. Half of the 16 articles that appeared last year were devoted to the injection of tuberculin and allied substances and a number of the others were concerned with animal experiment. A noticeable feature is the absence of any discussion of the theory of opsonins.

MEDICAL DIAGNOSIS. A MANUAL FOR STUDENTS AND PRACTITIONERS. By Charles Lyman Greene, M. D., 12mo. pp. 683. Philadelphia; P. Blakiston's Son & Co., 1907.

A useful little book, profusely illustrated and comprising in a form almost suited to the pocket, an adequate presentation of the most important methods of laboratory and physical diagnosis. An elaborate index adds greatly to the value of the compilation.

MATERIA MEDICA FOR NURSES. By Emily M. A. Stoney, Superintendent of the Training School for Nurses at the Carney Hospital, South Boston, Mass. Beautiful 12mo., of 300 pages. Third Edition. Thoroughly Revised. Philadelphia and London. W. B. Saunders Company, 1906. Cloth, \$1.50 net.

This new edition is especially commendable on account of its clear and concise practical indications for the uses of drugs. The special chapter devoted to poison emergencies is worthy of consideration by the practitioner as well as by nurses for whom the edition was especially written. Although small and concise in form, it covers the entire field of *Materia Medica* and Therapy including new measures and agents such as the serums and vaccines so far as they are established at the present time.

A TREATISE ON SURGERY. In two volumes. By George R. Fowler, M. D., Examiner in Surgery, Board of Medical Examiners of the Regents of the University of the State of New York; Emeritus Professor of Surgery in the New York Polyclinic, etc. Two imperial octavos of 725 pages each, with 888 text illustrations and four colored plates, all original. Philadelphia and London: W. B. Saunders Company. 1906. Per set: Cloth \$15.00 net; half morocco, \$17.00 net.

The second volume of this large work lies before us. It is, as far as the physical appearance of a book can be, one of the best examples of American art in this line. This volume alone contains 714 pages, and the illustrations in it number about 500. Many of these latter deserve special mention for the excellence with which they are conceived. This volume deals with regional surgery. The following subject matter being treated:

The vertebrae and their contents. The abdomen and pelvis. The female generative organs, and upper and lower extremities. The general scope of the work is comprehensive and evidently intended to meet the requirements of a student. It differs, however, in one respect, from the usual work on surgery in that it contains many of the special methods devised by its resourceful author. The chapter on appendicitis is especially interesting, in view of the recent death of Dr. Fowler, who was a victim of this disease. He was a distinguished surgeon, a most charming gentleman, and no death in our ranks within recent years is to be more lamented.

INTERSTATE MEDICAL JOURNAL

PUBLISHED ON THE FIRST DAY OF EVERY MONTH BY THE
INTERSTATE MEDICAL JOURNAL COMPANY

SUBSCRIPTION, \$2.00.

FOREIGN SUBSCRIPTION, \$2.50.

SINGLE COPY, 25c

Subscriptions may begin at any time. Volumes end with issues of December.

Original Articles.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. French and German articles will be received and translated free of charge, if found desirable for publication.

Reprints (290) of original articles will be furnished gratis to authors making the request, which must accompany the manuscript. Covers to these, and extra reprints, will be furnished at net cost.

Illustrations, such as plates, half-tones and zinc etchings, as in the judgment of the editors are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

Rejected Manuscripts will be returned, if stamps be sent for this purpose.

Advertisements.—Advertising forms go to press on the 5th of the month, the JOURNAL being mailed on the 15th. Time should be allowed for composition of advertisements and

for the sending and return of proofs. Advertising rates will be sent on application.

Change of Address.—In ordering a change of address, it is important that both the old and new addresses be given.

Discontinuances.—The INTERSTATE MEDICAL JOURNAL is not discontinued at expiration of subscription, but is sent until an explicit order to stop is received or a notice sent by us. A large majority of our subscribers prefer not to have subscriptions interrupted and files broken in case they fail to remit before expiration. It is therefore assumed, unless notice to discontinue is received and the amount of back subscription paid to date, that the subscriber wishes no interruption in his series. Journals returned are not notice of discontinuance.

Remittances should be made by check, draft, registered letter, money or express order. Address all communications to INTERSTATE MEDICAL JOURNAL, Linmar Building, St. Louis, Mo

INTERSTATE MEDICAL JOURNAL.

VOL. XIV.

JUNE, 1907.

No. 6

EDITORIAL.

THE EXPERT MEDICAL WITNESS IN FRANCE.

So much has been written about expert medical testimony as illustrated in a recent notorious trial that it seems almost superfluous to touch upon the subject in an editorial way. A solution of the problem seems so far from being a possibility in this country that a consideration of the method by which the expert in medico-legal affairs is brought before the courts in France might at least show the way towards the reform so much needed.

In the *American Journal of Insanity* (April) there is a letter by A. V. Parant, describing the manner in which the French courts have solved the problem and in addition touches upon the abuses so prevalent here. There is little doubt that the crux of the whole question as has been shown by numerous papers on the subject, does not lie in the nature of expert testimony itself, but solely in the way it is presented to the court and the way it is obtained. For both of these faults the physician who gives and the lawyer who obtains the testimony is to blame. If it were possible to obtain certain fundamental qualifications as to both experts and method and if it were further possible to have those who are in authority follow them, it is well within the limits of possibility that the problem, vexing as it is, will disappear.

Parant strikes at the root of the matter when he gives an important place to the qualification of an expert. This qualification recognized by the courts concerns itself with both the knowledge and the character of the expert. The courts of appeal at the beginning of each year name doctors of medicine on whom they confer the title of court experts. In order to be named one must have practiced at least five years or hold a diploma for medico-legal studies. From the list which is as select as possible the future court experts in any given case are chosen. Here at the very beginning there is created a standard that places all experts in a definite selected class.

The French expert, in no instance, is invited or hired, by either the state or the defense, as is the custom here. He is called by the court who naturally must be considered as one without prejudice. In insanity

inquiries, which this article deals with especially, the only duty of the expert is in the determination of the mental state of the prisoner. The limits of such an inquiry are fixed by the pathological state which is supposed to be present. In this specific instance the question of responsibility is less important than that of insanity. To make a diagnosis of mental disease or to declare the individual mentally sound is the task of the expert. The clinical point of view is the only one that is accentuated. A further important point that bears indirectly upon the question, is the fact that experts are paid according to a scale fixed by the courts. This scale of payment, which seems ridiculously small to us in America, is little more than that paid to an ordinary witness. It is seldom that an expert in a case of moderate importance obtains more than about twenty dollars for his service.

The advantage of this is obvious. The courts of law are an affair of the people and no question of money influence should ever be allowed to enter into its activities. An expert serving the courts, that is serving the state, is paid that minimal wage which all state service requires. As a foundation for the correct interpretation of the mental problem before the French expert these two propositions are admitted: First, that insanity carries with it irresponsibility; and second, that the diagnosis of insanity rests upon scientific demonstration. Grasset has well pointed out that there may be two kinds of responsibility a moral and a legal sort. These are often confused. The legal responsibility always presupposes a normal nervous system, or at least an intact one. It is with this side of the question that the expert has to do. In other words, he must decide whether there is anything radically wrong with the nervous system and whether this abnormal state can be made known by an examination.

The expert then places the result of such deductions before the judge or tribunal and as a scientific man he can have no interest in any phase of the problem, in any of its legal phases at any rate. Grasset adds that human acts are the result of a judgment between different motives and incentives. That individual is responsible from the biological and medical standpoint who has healthy nervous centers in condition to judge sanely the comparative value of these different motives and incentives. A definition of medico-legal responsibility limits the domain of the expert and he must not be permitted to wander into other fields. He must be instructed to confine himself to his legal role which is to declare whether this or that individual, whom he is commissioned to examine, is or is not insane and to what extent his insanity goes.

The question of contradictory testimony is likewise considered. Parant suggests, in this connection, that each expert appointed by the court from the list before referred to, be the subject of a possible challenge by both sides as is the custom in our own panel of juries. In this way a group

of experts could finally be selected which would be acceptable to both sides of the case and their judgment be absolutely followed as being the result of an unbiased reasoning from the facts obtainable in the examination.

For the proper qualification of experts in the courts there has now been established an institute for the training of experts, both in Paris and Lyons, The Institute of Legal Medicine. Numerous lectures and special courses are prescribed for such physicians as wish to engage in this kind of work. A diploma is conferred after the proper time and upon the testimony of necessary fitness.

This brief sketch of the French method is instructive as showing that an abuse that has extended over many years and made so undignified a showing before the American people can be changed in a short time if the fundamental principles be followed. If the courts and the physicians would agree upon a definite plan it would not be very long before the scenes revealed at the Thaw trial would be impossible in this country in a court of law representing civilized communities.

THE UNDENIABLE VERITIES OF ALCOHOL.

The obscurants in complete panoply are again in the center of the medical arena, this time vociferating against the use of alcohol. Although their seat of action is England, and not America, we should not make light of their onslaughts, for similar outbreaks have, in the past, characterized our own broadmindedness. And who can tell when our future, though innocence be its present hall-mark, will not be surcharged with portents of the on-coming of similar sweeping denunciations. The manifesto published in the *Lancet* and signed by sixteen reputable London physicians, who advocated the scientific use of alcohol, has started a discussion that has all the undesirable elements which go to make up the Puritanic conscience. In the many opposition letters perused by us, there is not a gleam that might possibly be construed into a hopeful dawn of intelligence in the intellectual night of the writers; in fact, their state seems to be that dull deliquium into which many doctors and others of supposedly "lesser education," fall, when they "take their pen in hand just to write a few lines to the editor."

Two recently published books, one by an Englishman (*The Psychology of Alcoholism*, George B. Cutten; Walter Scott Publishing Co., London, 1907), the other by a German (*Alcohol, The Sanction for its Use*, Dr. J. Starke; G. P. Putnam, New York, 1907), give evidence of a decided difference in the national and mental traits of the two authors; for while Mr. George B. Cutten writes slipshoddedly down to those misdirected en

thusiasts, who delight in their own narrowness, and their deep-seated prejudices, Dr. J. Starke indites with a sureness of his subject, an earnestness of purpose and a clarity of style that make his book a most convincing argument for the scientific use of alcohol.

Mr. Cutten, with a pomposity worthy of a penny-a-liner who ekes out a precarious living by expatiating on high morality for "our daily readers," maintains that "the highest possible perfection of the nervous system is only possible with strict abstinence," and that "high, virile thinking, and keen unfaltering judgment cannot be a product of a mind which is dependent on an alcoholised brain." To support his many high-flown asseverations, he ransacks the classics and quotes many apt sayings, in the hope that the modern mind which, fortunately, has been benefited by some sort of scientific training since the year one, will be impressed. One quotation, especially that of Aristophanes, that "to drink is evil, for from wine arises breaking of doors, blows, stoning, and the money that must be paid down when the headache's past," condemns the book in so far as it is a declaration to the world that Mr. Cutten seriously considers the sprightly wit and humor of the famous Greek dramatist who convulsed Athens with his comedies, "The Frogs" and "The Birds," in the fifth century before the Christian era.

Dr. Starke, on the other hand, has written a sane tract; one that should be placed in the hands of all teetotalers who are clamorously demanding reform. A few citations should suffice to show the high value of the work. On page 47 we read, "and so, for example, it is now very probable that the so-called 'beer heart' has but little to do with alcohol. This really has its origin in overnutrition (with the consequent deposition of fat in organs in which fat cannot be used), and in the colossal overtaking of the function of the heart. I have known persons who drank more than nine quarts of beer daily. Now, all this liquid has to pass through the heart and the blood vessels before it can be eliminated from the body. Upon this depend nine-tenths of the consequences of immoderate beer drinking. That has been proved to me to the extent of my having observed how the same affections of the heart occurred to persons who took little alcohol and none regularly, but in other respects were very good livers, and drank a good deal of coffee, water, etc. A man can quite ruin his blood vessels and his heart by daily increments of the fluid ingested, even if it be only water," and on page 34 is printed the following truism: "It is to assuage the persistent feeling of misery, that many a mentally defective or unfortunate person drinks, and for that purpose it is not 'alcohol' that he uses, but 'alcoholic drinks.' As a rule he is not content with drinks of which alcohol is the sole active principle, but after a while he generally craves those that contain fusel oil in addition to alcohol, like many distilled spirits. And in foreign countries district and social strata

known for drunkenness are those characterized by the notorious use of spirits containing fusel oil, yea, even in better circles whoever drinks alcohol for the sake of stupefaction takes such spirits in course of time. Hence there arises the question of whether drunkenness is not in great measure to be attributed to the fusel oil rather than to the alcohol."

With these verities in mind, the pratings of our visionary ranters should not disturb the thinking element in our population. And, truth to tell, small heed would be paid them were their outpourings printed in books. Unfortunately, the daily press is their medium, and so long as their fiery words and distorted opinions are encouraged so that the uneducated may be instructed, the clear, serene face of science will be besmirched, and our mental equipoise undermined.

FEMININISM VERSUS TOBACCO.

The kindly spirit which has recently invaded the ranks of an American medical society, converting the male members from truculent entities into gentle and passive members of the body politic, has been the means of adding another jewel to the much-begemmed crown of American womanhood, wrested as part payment for victories won in the holy war for supremacy. We had hoped that the battle between the sexes would continue indefinitely in these, our democratic United States, if only to add zest to the monotony of our daily existence, and as an object lesson to those benighted Europeans who happen to stray hitherwards; but with the complete defeat of the male members of the medical society under consideration, on the question whether to smoke or not to smoke in the presence of a half-dozen women members, we must declare that all further fighting be decreed perfectly useless.

Without going into the details of the proceedings that led to the annihilation of the smoking privilege enjoyed for years by the male members, it would be well to ask why some sapient son of Adam did not try, by blandishments gentle and diplomatic, to convince one or another "lady" member, directly he saw the storm brewing, of the many advantages that would accrue to her were she to smoke whilst a paper bordering on inanity and stupidity was being read? Many a member of our medical societies can vouch for a kindly feeling toward his fellow-men in similar circumstances, and granting the truth of this statement, why should not a "lady" member, who as an integral part of a medical society, classes herself with the male element, and not with her inferior sisters, experience the same delightful sensations. Evidently the suggestion was not made, or if made must have been so frowned down by the Spartan-like matrons that the foolishly daring male, who had but insinuated a trial, was gorgonized into uttermost silence.

Prejudices are foolish and puerile; they are the expression of small ideas, and they should not be allowed to lodge in the mind of any member of an organization to the destruction of the peace and comfort of others. But why preach against the small ideas of man's mental alembic; could it do its customary distilling if one large, mighty idea got into it by accident? The ingenious reader may fancy we are too harsh in our strictures, but to justify our position in the matter, we have the very best authority for stating that no misgivings entered into the mind of any "lady" member that she and her male champions were making an unwonted exhibition of themselves; moreover, they never once paused to consider the untenability of their attitude. We even have the hardihood to suppose that occasionally they smiled with easy scorn upon those who take the world in a sane sort of way, that is more philosophically than they, and voted all those persons godless gluttons who recreate themselves with whiskey, cigars and beef.

Femininism when confined to women, is not to be wholly condemned, but when men become infected with it, as was the case in the society which we have in mind, it is about time to acknowledge that man has fallen from his high estate. And to what depths many fell some future historian, who has the cunning of a Carlyle or a Macauley, will have to do justice. Will any historian, we pause to ask, be he the mightiest genius of his age, be able to transcribe to his inspired pages the exquisitely humorous words of the physician, who solemnly declared, smoking must stop, because "whenever I go home from this Society, I simply cannot go in to my wife until I have taken off all my clothes".

The consideration the doctor showed for his wife prior to the extinction of the smoking habit in the medical society, and the resulting conjugal bliss when he announced to her his victorious speech and the routing of the enemy, tobacco, are fitting subjects for poetry. Prose is decidedly not the medium for any mortal's rhapsodies.

THE ABOLITION OF QUACKERY.

In spite of the crusade which has so recently flourished against the quack, the patent medicine man, and the nostrum exploiter, we feel a sense of impotency akin to that of failure in observing these arrant gentlemen still in the field; some of them perhaps, a bit wobbly, but mostly unabashed, undefeated and hopeful after the storm. A crusade is only a crusade and as such soon spends its force. The great American fraud has its roots so deeply placed in the American mind that the result of any agitation might have been foreseen. Wrecked again upon the rocks of uncertainty, our battered hopes give small solace for the future, and we

are inclined to protest and moralize perhaps—like the lady—a bit too much.

The part played by the medical profession toward the suppression of the evils of quackery and quackdom has not been one of perfect unanimity of feeling that might be expected. We represent a house divided against itself, not once but many times. Some of us assume so high an ethical standard that others of us are inclined to blink in the glory of the light. Some of us have such tradesman-like ideals, or rather lack of ideals, that the rest must stand askance and cry "unclean." Again many of us do things that so closely resemble the old original quack doctor that there seems to be little help for us. We are not all on the same moral or mental plane, nor do we have the same financial exigencies to face as we follow our calling. A thousand temptations beset our path, and moral justification is certainly an affair as elastic and resilient as rubber.

To us it seems that the question which we as a profession have to answer takes origin in public ignorance and credulity. We agree with Bacon, who says, "We see the weakness and credulity of men is such as they will often prefer a mountebank or witch before a learned physician". Here we start with diseased ignorance hoping for relief; and as physicians we must enter on the stage and play our part, a part which may be that of a tradesman or of a true, professional man.

"A trade," says President Faunce of Brown University, "is an occupation for a livelihood, a profession is an occupation for service of the world." How many of us, let each one ask himself, looks upon his calling in the light of a ministry?

The fable of the bundle of sticks is not inapplicable. We feel that the irregularities, which so please a gullible public and which thrive and increase and wax strong, will so continue. The patent medicine man will still dazzle us with his ill-gained wealth, and the semi-quack doctor will lead the profession, financially speaking, so long as we are not impressed, as a whole, with the true aims of our work in the world.

It is not the childish, ingenuous quack who flouts respectability that we need fear, but the smooth-tongued, pharisaical quack, whose position is quite secure in medical ranks and who shows a Pecksniffian horror when the overt methods of the true quack are mentioned. For he is the obstacle to purification of medical ethics, and not until his ostracism will the war against the advertising quack, the patent medicine man and the nostrum exploiter be effective.

THE ROAD TO YESTERDAY.

That Medical History Clubs have a purpose and a good one, within decided limitations, is patent to those whose readings have taken them into historical fields as yet but half explored by modern physicians. Gropings in the medical obscurities of periods prior to the Renaissance deserve attention, even applause, for the labor entailed means much perseverance, and judged by lenient critics, considerable erudition. It is only when a member of one or another of these dignified clubs takes the short road to yesterday, and reads a paper that is nothing but a grotesque architecture of words descriptive of a decayed structure of conventionalities, that we feel as if a protest were not untimely. This rather narrow and biased view is prompted by reading, in the Johns Hopkins Hospital Bulletin for May, Dr. J. G. Mumford's "Boston Medicine One Hundred Years Ago and a Notable Physician of the Last Century", an essay read before the Johns Hopkins Historical Society, February 11th, 1907.

Medical History Clubs, as we understand them, should further researches in that part of medical history which is an unknown quantity to all but the small minority who have made the subject a life study. In doing this their *raison d'être* cannot be questioned, and though certain modern spirits who are actively engaged in the mental pleasure and ecstasy of living in the seething present, refuse to take cognizance of their import and, in fact, view them with contempt, it must be admitted by all fair-minded critics that aside from a certain fascination pertaining to the study of medical history, considerable ultimate good, results. For even though at times the subject of the paper read exploits such questionable heroes of science as Mesue, known as James Damascenus, Rhazes or Magister Salernus, the high purpose of the Medical History Clubs is not lost sight of and a fillip is dealt out to stir the stagnant pools of historical thought. But Dr. J. G. Mumford's paper is the converse of our convictions for he dwells at length upon a rather modern, known and uninteresting period in the social, economic and medical history of Boston, and heaps undue adulation on a character whose message to the world had few, if any, gleams of science and, moreover, spelt the instability and vagaries of eccentricity.

Boston, in the first half of the nineteenth century, was without exception the best regulated, the best conducted, most respectable community in the world. It also was the most provincial. We do not need Dr. Mumford's word for what he characterizes as its entrancing simplicities; Boston writers of worth and reputation have told us enough of these to allay any fears that might exist outside Massachusetts' capital that, in the early part of the nineteenth century, the worldly and wasteful

methods of metropolitan life had invaded its well-guarded precincts. Again, the twice-told tale is told us of the prosperity of the merchants, the simple tastes of their wives, the worth and value of such cognate organizations as the Massachusetts Humane Society, the Boston Female Asylum and the Charitable Mechanic Association. All this would be of interest in a modern guide-book, but in a scholarly paper read before a dignified body of men interested in the dawn of medical science, it has no pertinency, and awakens only a feeling of mordant criticism.

As to Dr. Samuel Gridley Howe, the hero of the paper, though Dr. Mumford protests against the world referring to him as Mrs. Julia Ward Howe's husband, his reasons for objecting are not cogent or convincing. Of all the erratic men who have found encouragement and toleration in the social laxity of our republic, Dr. Howe was probably the most unique figure. The Greek War of Independence, the Polish Revolution, Laura Bridgman, the famous blind deaf-mute, a fatuous expedition to annex Santo Domingo, engaged his attention for a time but the lack of mental equipoise in all his undertakings prevented his achieving lasting success. He was always a buccaneer or a filibuster; and despite the fact that Dr. Mumford characterizes him as "the Apostle of Freedom, the Hero of Greece, and the Champion of the Slaves," it is an error in judgment to place him in the bead-roll of medical notabilities whose lives and works are mile-stones in medical progress.

AN UNHOLY ALLIANCE.

We observe that the lion and the lamb are about to lie peacefully together in Boston, last of places to look for such an event. We tremble to think of the restlessness this may cause in the spirit world beyond. Shade of Oliver Wendell Holmes! What would that worthy gentleman say and think could he but read the words of some of his followers, and see his despised homeopath about to enter the sacred membership of the Massachusetts Medical Society?

But this is not jest. Richard C. Cabot* has spoken the homeopaths as regards their disagreement with "other physicians". He says that the medical profession has been unduly arrogant in assuming the term "regular" as opposed to homeopath, and further that "two ships that steer for the same port are sure to come together sooner or later, no matter how far apart they may be on the ocean. If we keep ourselves in this mind, if we are fair and honest and not uncharitable, we shall pool our knowledge some day and abolish sectarianism in medicine."

Dr. Cabot's object in this seems to be the "soft-soaping" of the homeo-

* Critic and Guide, April, 1907.

paths into a willingness to be drowned in the depths that await them when they shall drop their distinguishing name. All of us nowadays realize without Dr. Cabot's aid the fact that the cognomen "homeopath" is a trade-mark without which the individual bearing it would be reduced to the level of practicing medicine, pure and simple. Dr. Cabot's object is perhaps a worthy one, but fulsome praise when not borne out by facts is always to be condemned. What homeopathy has contributed to the advancement of science is only that which has come through an attitude of negation, and of unconscious effort. Perhaps we should forgive them for they knew not what they did. But we do not feel that they should be flattered into suicide, but rather be allowed to continue their progress through inanition to eternal desuetude.

The monograph of Dr. Holmes entitled "Homeopathy and its Kindred Illusions" will bear re-reading. We believe it to be not only a fair and just estimate of the homeopathy of his time but also a prophecy of the homeopathy of our generation and of the future.

LITERARY NOTES.

Gazette Medicale de Paris, the oldest medical journal in France, will in the future appear under the management of Dr. Lucien-Graux, who is also editor-in-chief of the *Gazette des Eaux*.

The Macmillan Company have just issued a Third Revised Edition of Professor J. Mark Baldwin's well-known work, *Mental Development in the Child and the Race*. Experimental psychology, as evidenced in infant and child life, is gone into with patient research, and because of this, the work stands head and shoulders above the mass of books which merely touch upon child psychology.

W. B. Saunders Company have issued "Prevalent Eye Diseases," by Samuel Theobald, M. D., Clinical Professor of Ophthalmology and Otology, Johns Hopkins University. The majority of works on diseases of the eye are particularly written for the specialists; Dr. Theobald on the other hand has made his book of paramount interest for the general practitioner by dwelling on the requirements of the physician engaged in general practice.

The friends of the late Mrs. Craigie (John Oliver Hobbes) have formed a committee to raise subscriptions for a memorial to her. It is proposed that the memorial should include the following: (1) A portrait plaque, in marble or bronze, to be placed in University College, London; (2) a replica of the plaque to be placed in a suitable position in the United States; (3) a scholarship for the study of modern English literature to be given annually in England; and (4) a similar scholarship to be given annually in the United States.

ORIGINAL ARTICLES.

POST OPERATIVE ACUTE DILATATION OF THE STOMACH. (GASTRO MESENTERIC ILEUS.)

By M. G. SEELIG, M. D., St. Louis, Mo.

Associate Surgeon to the Jewish and Skin and Cancer Hospitals; Instructor in Surgical Pathology, Medical Department of St. Louis University.

Within the last eight months, there have appeared two exhaustive papers by American authors (Finney, Conner), dealing with the subject of acute dilatation of the stomach. These two articles plus a contribution by Byron Robinson, in 1900, and two or three other casuistic reports represent the sum total of American effort in the study of one of the most grave and least understood of post operative complications. This dearth of published material warrants the report of a single case. It should be said at the outset, however, that the purpose of this report is not to follow the usual lines that have been laid down in all of the previously published accounts of gastro-mesenteric ileus, the object being rather to insist upon the possibility of arriving at an early diagnosis of the condition, reference calling attention only incidentally to many of the unsettled points in the etiology and pathology of the disease, and here, it may be said, that aside from the facts of the sudden occurrence of dilatation of the stomach, and the subsequent serious and often fatal trend of local and general symptoms, there is no definitely established factor in the etiology or pathology of the disease. The truth of this statement is mirrored in the multiplicity of names used in describing the symptom complex:—Acute dilatation of the stomach, gastro-mesenteric ileus, artero-mesenteric ileus, combined ileus and duodenal ileus.

In a fairly large proportion of the cases that have come to autopsy, the duodenum has been compressed by the mesentery to a degree sufficient to close off the intestinal lumen at this point; but it has been shown, that this compression is not an absolutely essential factor in the production of acute dilatation of the stomach. Whether the dilated stomach primarily causes the occlusion of the duodenum, by crowding the small intestines into the pelvis, thus tensing the mesentery so that it constricts the duodenum, or whether the duodenum is primarily constricted by the mesentery, causing a consequent gastric dilatation; whether a primary motor insufficiency of the stomach walls or a pronounced enteroptosis should be reckoned as etiological factors; whether or not, from the point of view of etiology, much importance should be accorded to a long, lax mesentery (Rokitansky), adhesions between loops of intestines (Treves), lax abdominal walls (Kundrat), lordosis, with a low

situation of the duodenum (Schnitzler), excessively high intraabdominal pressure, due, for example, to post operative vomiting (Kelling), whether or not Zade is correct in his assumption that gastro-mesenteric ileus is never caused by the mere gravitation of the intestines into the pelvis, if all other intra-abdominal conditions are normal; whether a primarily dilated stomach may compress the duodenum, and finally, whether the administration of an anaesthetic is a factor in causing the disease, are all moot points, the discussion of which is gone into at length, in the papers of Finney, Conner, Neck and Zade.

Our concern here, is not with the uncertain theories of the etiology or pathology of the disease; but with the eminently certain condition that there is a symptom complex, serious in nature, difficult of diagnosis, and grave as to prognosis, which threatens every patient subjected to operative interference. This condition has been termed gastro-mesenteric ileus, because it is characterized by gastric dilatation, caused in a large proportion of cases by pressure of a tense mesentery against the duodenum beneath it. A most important point to bear in mind is this;—that after the process has once established itself, it constitutes a vicious circle. The more the duodenum is compressed, the more the stomach dilates, and the increasing dilatation of the stomach tends in turn, to maintain and increase the obliteration of the duodenal lumen. The term arterio-mesenteric ileus is used, because the superior mesenteric artery, coursing as it does between the leaves of the mesentery, renders efficient aid in compressing the duodenum.

The symptomatology of the disease is typified in the appended case report:

K. F., 35 years old, a native of Russia, and a blacksmith by occupation, was admitted to the surgical service of the Jewish Hospital, suffering from a large inguino-scrotal hernia, complicated by an undescended testicle. The patient was turned over to me for operation by Dr. H. Tuholske, Surgeon-in-chief to the Jewish Hospital, to whom I am indebted for the privilege of reporting the case.

History.—The family, past and present history were negative, except for the existence of a hernia that was sufficiently painful, at times, to cause incapacity.

Physical Examination.—The patient was a stocky, muscular individual, with particularly well developed abdominal musculature. Examination of the thoracic and abdominal organs and spine was negative. The right scrotal cavity was occupied by a mass about the size of half a cocoanut, which transmitted an impulse on coughing, and which reduced into the abdominal cavity with a gurgle. The right external ring admitted two fingers. The right testicle was situated within the abdominal cavity.

The urine was acid, clear, and contained no albumen, sugar or casts.

The operation of herniotomy was performed under ether anaesthesia, the duration of the anaesthesia being 30 minutes. The testicle was handled very little, owing to the fact that it was situated so far within the abdominal cavity that it was deemed wiser to leave it there, rather than to divide the vessels of the cord and attempt to put it into the scrotum.

The patient left the table in excellent condition, with a full, strong pulse of 80. He regained consciousness half an hour later, and rested

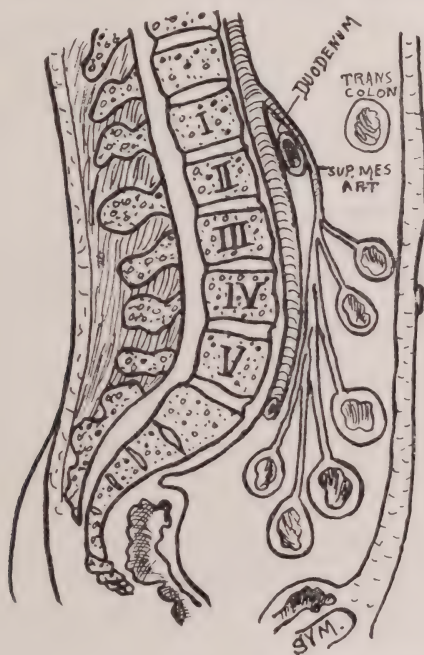


FIG. 1.

Sagittal section showing normal viscera (Finney)

comfortably for twelve hours, after which he began to complain of nausea, and pain in the epigastrium. The patient was examined at this time, by the house surgeon, Dr. Evers, who recorded, that there was slight distension, limited to the epigastric region, and a markedly tympanic note over the stomach area. The distension and pain both increased, being relieved only temporarily, by loosening the bandage. Twenty-two hours after operation, the patient vomited, for the first time, a large quantity of a dark yellow fluid. After this, he reported that his

pain was much less, and Dr. Evers noted that the epigastric distension practically disappeared. After a short period of time, however, the pain and distension reappeared, and despite gastric lavage, vomiting was repeated at intervals during the night. When I saw the patient, the next morning, his general condition was alarming. His facies were distinctly Hippocratic, and he lay in bed moaning and tossing about, in the state of nervous unrest so commonly seen as the initial symptom of peritonitis. His temperature was 100.5° , and his pulse was 100, small, and thready. There was marked distension in the epigastric region, and the distended area assumed the exact shape of a dilated stomach, the greater curvature of which reached three fingers below the umbilicus. There was a markedly tympanitic note over the distended area; but there was no tenderness in the epigastrium. Nausea was still a prominent symptom, but the patient had not vomited for over three hours. Urine was voided voluntarily in sufficient quantity. The wound was examined, and was found to be in good condition. Flatus had been passed in moderate quantity through a rectal tube, and after a turpentine enema. The passage of flatus had not been followed, however, by any lessening of the distension. Hiccoughing of a most aggravating nature now set in, and the pulse gradually became accelerated until it reached 120 beats to the minute, the patient presenting the symptoms of supervening collapse. These symptoms seemed to point indisputably to the onset of peritonitis, and I was just about to order constant rectal injection of saline solution, and the Fowler position, when the patient suddenly vomited, in projectile fashion, about ten ounces of foul smelling (not faeculent), dark brown fluid. His abdomen was bare and in full view at the time of vomiting, so that I was able to observe, that immediately coincident with the vomiting, the epigastric distension disappeared, as if by magic. Immediately after vomiting, the patient remarked that now, he felt entirely free from pain. This series of phenomena at once suggested acute dilation of the stomach. Gastric lavage was ordered, and a large quantity of dark brown, foul smelling fluid was washed out of the stomach. An analysis of this fluid showed it to contain blood, bile and shreds of gastric mucosa, infiltrated with blood. The patient was placed in an exaggerated Trendelenburg posture, and immediately after assuming this posture, the symptoms abated. Hiccoughing, vomiting, pain and distension ceased, flatus was expelled freely and voluntarily, and the pulse gradually slowed down to 78. All food was withheld by mouth, and rectal feeding was resorted to for the next twelve hours. At the end of this time, the foot of the bed was lowered again, with the result that within an hour, there was a recurrence of the pain, epigastric distension, hiccoughing, vomiting and rapid pulse. The foot of the bed was raised again, and immediately all symptoms ceased. The patient was kept in the Trendelenburg posture for the succeeding

four days, his condition, all the while continuing normal. On the fifth day, the horizontal position was reassumed, with no bad results, and from this time on, recovery was uneventful.

Here then was a symptom complex, ushered in by the gradual development of abdominal pain, followed by distension confined to the epigastric region, anxious unrest, hiccoughing, Hippocratic facies, vomiting, increasing rapidity of pulse, and finally, by evidences of collapse. All these signs, associated with the fact that the peritoneal cavity had been opened

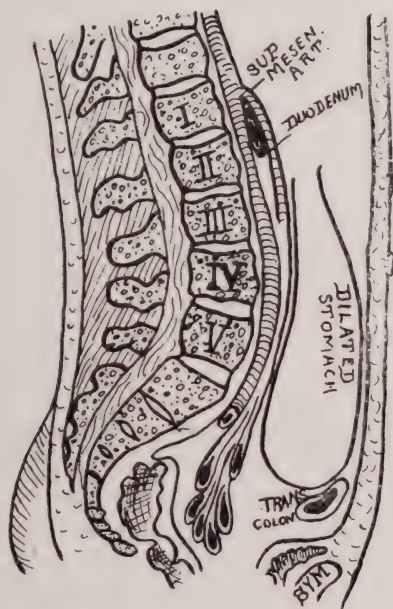


FIG 2.

Sagittal section showing compressed duodenum, dilated stomach, + intestines caught and imprisoned in the pelvis (Finney)

previously furnished excellent grounds for a diagnosis of postoperative peritonitis. The only symptoms that weighed in a measure against the diagnosis of peritonitis, was the moderately free passage of flatus, and the absence of both abdominal tenderness and rigidity. The diagnosis of acute dilatation of the stomach was made on the distinct outline of the dilated stomach against the anterior abdominal wall, and the absolute disappearance of this outline immediately following the vomiting of a large quantity of dark colored fluid. The absence of peritoneal infection, and

the presence of acute gastric dilatation may be assumed fairly, to have been confirmed by the course of the disease.

The practical crux of the whole question of acute dilatation of the stomach, lies in the close resemblance of the disease to peritonitis. The mortality in 102 cases of acute dilatation, collected by Conner, was 72.5 per cent. Unfortunately, as is well known, the mortality following peritonitis is also high. Well directed treatment affords gratifying results in both these diseases. Treatment based on a failure to differentiate between the two, however, often leads to a fatal outcome. The modern treatment of peritonitis demands that the toxic intraperitoneal exudates be kept away from the open lymphatic stomata that dot the under surface of the diaphragm, by using the so-called Fowler's position (head high, pelvis low). To reverse this position in a case of beginning peritonitis, would mean to gravitate the toxic exudate toward the diaphragm, thus favoring absorption of the toxins, rapidly, before the organism had time to call its complicated mechanism of immunization into play. With acute dilatation of the stomach, conditions are just the reverse. Among the many moot points in the etiology and pathology of this condition, one fact stands out clearly, namely, that in a very large number of cases, the duodenum is compressed by the root of the mesentery, which is held taut over it by reason of the fact that the intestines are crowded into the pelvis, and held there by the dilated stomach. Such being the case, we can hope to release the intestines from the pelvis only by elevating this part of the body and lowering the head of the patient; in other words, by using the Trendelenburg position. To put the patient in Fowler's position would be the surest possible way of throwing an added guard around the already effectually imprisoned intestines.

Granting then, that the treatment of the two conditions, acute dilatation and peritonitis, varies diametrically, is it possible to determine definitely, when we are face to face with one or the other disease? Connor is undoubtedly correct, when he says that, "Acute dilatation is not difficult of diagnosis, if the possibility of its occurrence be but held in mind". Yet, a consideration both of my own case, and of those cases recorded in literature in which a diagnosis of peritonitis was not disproved until autopsy, forces the conclusion that a differential diagnosis may be extremely difficult, and at times, impossible. A factor of the utmost importance in the differentiation lies in being able to determine whether the abdominal distension was *primarily* in the epigastric region. Ordinarily, with simple meteorism, the epigastrium is the last spot on the anterior abdominal wall to bulge, owing to the rigid resistance offered by the flanking costal arches. When the stomach dilates, however, even as the result of a simple acute indigestion, it causes a rounding out in the epigastric region. It is the observation of this early epigastric distension

that is of such vital importance in diagnosing acute dilatation of the stomach. The symptom is transient, and it may take only a short while for the stomach to assume such proportions that it distends the whole abdomen symmetrically, as do the paretic intestines in peritonitis. The case under discussion brought to mind how frequently, during my hospital internship, I was called to relieve postoperative distension in patients who had been operated upon for hernia. In a large proportion of these patients the distension was confined to the epigastric region. It was our custom in hernia cases to apply a very tight starch bandage embracing the lower abdomen and the thigh of the side operated upon and we used to think that the distension showed itself in the epigastrium, because the lower abdomen was compressed by the tight bandage. I now feel firmly assured that many of these cases were purely gastric in origin, despite the fact that I cannot recall an instance in which any threatening symptoms of a serious nature occurred.

And this brings us to the concluding point of the influence of tight abdominal binders and bandages as a causative factor in acute gastric dilatation. Several authors (Buzzard, Kelling and Willett), have called attention to the coincidence of acute dilatation of the stomach, and the wearing of plaster of Paris corsets, but I can find no mention in literature of the significance of tight binders or bandages applied after operation. A consideration of the lower half of the trunk demonstrates with what ease the mechanical hindrance of a too snugly applied dressing may predispose to the condition under discussion. This region may be divided into three areas:—1. The upper trunk area, made up of the lower part of the rigid chest wall. 2. The middle trunk area, made up of the yielding abdominal musculature. 3. The lower trunk area, made up of the rigid pelvic walls. An abdominal bandage then, if it be applied tightly, encounters firm bony counterpressure at its upper and lower parts, but presses inward that portion of the abdominal wall lying between the ribs and the pelvis. In other words, a tight bandage causes a partial hour glass constriction of the abdominal cavity, the lower bulb of the glass corresponding to the flare of the pelvis. It is easy to conceive how loop after loop of intestine might work its way gradually into the pelvis, by means of peristalsis, and it is equally easy to comprehend the difficulty encountered by these loops in working their way out, owing to the constriction in the abdominal wall, above them. If we grant the possibility of such a sequence of affairs, we have at hand, to say the least, a possible factor in the imprisonment of the intestines in the pelvis. This imprisonment furnishes a cause for the tightening of the mesentery over the duodenum, and therefore for the consequent gastric dilatation, which, in its turn furnishes a further bar to the return of the intestines to their normal situs. It must be borne in mind, that when a bandage or binder is applied

immediately after operation, while the patient is still under the influence of the anaesthetic, and the abdominal musculature relaxed, constriction is much more easily accomplished than it could be in a non narcotized patient.

As was previously stated, no attempt is made here to discuss either the entire literature, or the moot points of acute dilatation of the stomach. The object has been rather to present a case that illustrated the possibility of establishing an early diagnosis, to emphasize the pernicious effect of tight abdominal bandaging, to call attention to the importance of early inspection of the abdomen after operation, and finally to demonstrate the efficacy of gastric lavage combined with postural treatment as means of overcoming the disease.

BIBLIOGRAPHY.

A very comprehensive bibliography is furnished by the following four papers: Gastro Mesenteric Ileus. J. M. T. Finney, *Bost. Med. and Surg. Jour.*, Aug 2d, 1907. Acute Dilatation of the Stomach and Its Relation to Mesenteric Obstruction of the Duodenum. L. A. Conner. *The Amer. Jour. of Med. Sciences*, March, 1907. Ueber Post Operat. Arterio Mesenterialen Darmverschluss an der Duodeno—Jejunalgrenze, etc. H. Zade, *Brit. z. Klin. Chir.* Bd. XLVI, page 388. Die Akute Magenerweiterung. Sammel Referate. Dr. Neck, *Cent. f. d. Grenz. d. Med. u. Chir.*, Nos. 14, 15, 16 and 17, 1905.

3908 Olive Street.

URETHRITIS AND COMPLICATIONS.

By G. S. PETERKIN, M. D., Seattle Wash.

The things that may be said of the subject assigned, "Urethritis and Complications," are so numerous that a thesis would exceed by many minutes the time allotted. I have, therefore, taken it upon myself to create a mechanical conception of the urethra and adnexa, in order to enunciate principles, which, when employed, have proved to be of practical value in treating successfully diseases of this portion of the human anatomy.

Such a conception demands not only a definite mental picture of the parts involved, but also a knowledge of their functions and uses, so that one may pull apart, systematically, as a watchmaker does a watch, this portion of the human anatomy and demonstrate, step by step, the soundness or imperfection of each portion of the genito-urinary mechanism. Then the causes of the disturbances which send the patient to us, if they can possibly be ascertained, will become self-evident, and a rational remedy suggest itself that will be within the facilities of the individual physician to apply. This I shall attempt to prove.

Gentlemen, how many of you, for instance, have a working knowl-

edge of the genito-urinary tract—its length, distensibility, shape, caliber, etc.? Is it always patent? Most of all, what is the value of such knowledge?

To demonstrate, I must speak in a general way of some of the pathologic conditions encountered. Conveniently, they may be classified as follows:

(a) Inflammation, acute, whose characteristic symptoms are simply the cardinal symptoms of inflammation—heat, pain, redness, swelling, and impaired functions, modified by the structural characteristics of the parts involved; causes—micro-organisms.

(b) Inflammation, chronic; a condition that results from acute in-

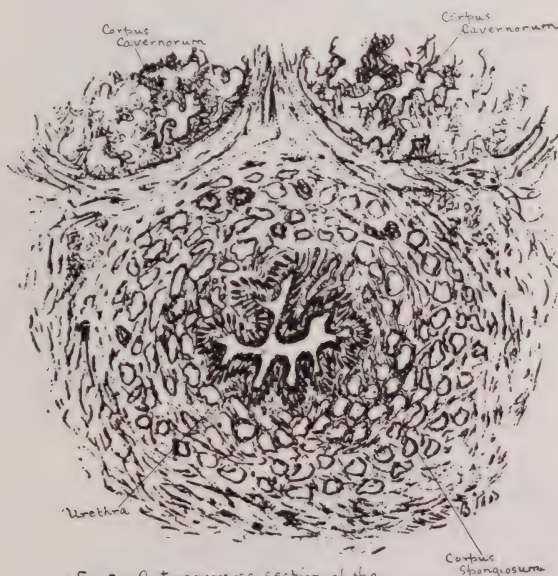


Fig. I. A transverse section of the normal male urethra.

flammation; i. e., intense congestion, ulceration, granulation, epithelial thickening, cellular infiltration of the sub-epithelial tissue, that may persist as such or be followed by contraction, a condition that may involve the whole genito-urinary tract, though more usually locating itself in one or more areas of various sizes.

(c) Mechanical injury that results in true cicatricial tissue.

Now turning to the diagrammatic sketch, Fig. 1, we have a drawing of the normal urethra, a transverse section of the penis two inches behind the gland. Note the infoldings of the mucous membrane. The length of the average male urethra is nine inches or 23 c. m., with mucous membrane irregularly enfolded the whole length. The capacity of the anterior urethra alone, when distended, is on an average 25 cc., or seven

drams. Do not these facts suggest that it will take a considerable volume of water to wash out thoroughly six or nine inches of such infolding? In other words, the small urethral syringe, the average capacity of which is two drams, or five cc., is at best a makeshift remedy, since the fluid it



FIG. 2.—A section of figure 1 greatly enlarged.

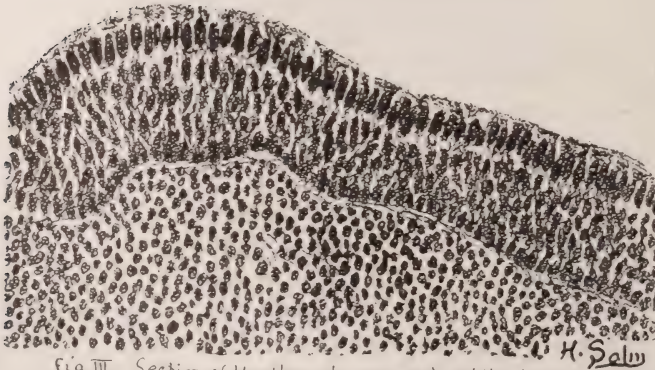


fig. III. Section of Urethra showing sub-epithelial cellular infiltration in its earliest stage.

injects cannot, without injury, be bactericidal in the true sense of the word, and the amount it contains will not mechanically cleanse.

Fig. 2 is a section of Fig. 1 greatly magnified to show more clearly the histology. Here you see the layer of cylindrical epithelium surround-

ed by blood vessels and sections of the urethral glands that are racemose glands. (See Fig. 7, E.)

In Fig. 3 we have a section of the urethra showing sub-epithelial cellular infiltration in its earliest stage, composed of round cells and possibly a few proliferated connective tissue cells, the treatment for which, if they do not resolve in the normal course of events, is pressure.

Fig. 4 shows a later result of such infiltration where treatment (pressure), has been inefficiently applied, or not at all. So the pathological process has progressed to the stage of connective tissue formation; in other words, a true stricture.

Fig. 5 shows a section of the roof of the urethra with round cell infiltration that also exists in the tubular ducts of the follicles. This is

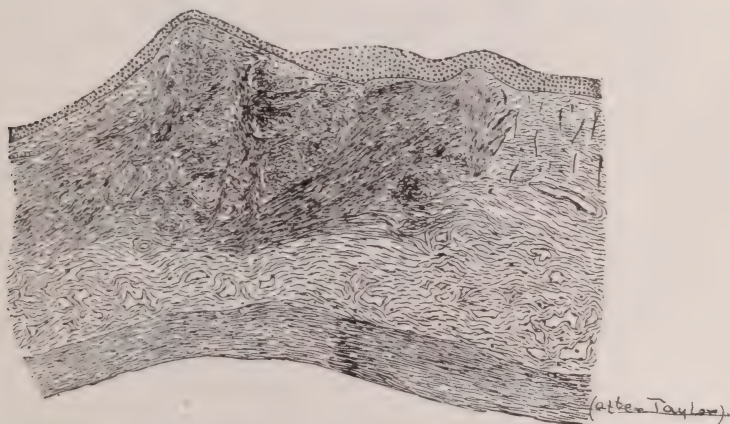


FIG. 4.—Showing a section through a firm inodular stricture, the connective tissue being so dense as to resemble cicatricial tissue. A true stricture, the later result of infiltration.

presented to show inflammation and proliferation of the epithelium of one of the urethral follicles with the round cell infiltration about its walls. Can anything but pressure, applied vertically, evacuate the contents of such a follicle and cause absorption of the infiltrating cells? A sound that just brushes past the opening of the duct will not accomplish this, but a dilator will.

Before elucidating the application of these drawings to the subject in hand let us proceed to view a diagrammatic drawing (Fig. 6) of the whole genito-urinary tract, exhibiting two routes to the urethra; route one, from the kidney, through the ureter into the bladder, the opening of the ureter being represented by the white spot A; the bladder, by the dark circular area which runs into the urethra. Route two, from the testes, through the epididymis and the vas deferens that passes round through the ab-

dominal cavity back of the bladder and opens into the reservoir B, the seminal vesicles, that terminate in a duct which passes through the prostate into the urethra. In the prostatic portion are other openings, those of the prostatic ducts, about 20 in number. Proceeding further along the urethra, we perceive two glands, C, of considerable size, opening into the urethra, called Cowper's glands. Moreover, the innumerable openings of the glands of Littre or the crypts of Morgagni in the anterior urethra must not be forgotten. So at a glance the connecting avenues of the whole genito-urinary system can be seen.

What knowledge of practical value is to be deduced from retaining



FIG. 5.—Showing a segment of roof of urethra, with round-cell infiltration of the mucosa and tubular ducts of follicles.

such a mental picture? Let us, for instance, start at the usual point of infection, the meatus, ascertain the route of a gonococci invasion, and we will then perceive. We know that the germ travels like fire along the epithelial cells. By the way, if this is true is the compressor urethrae, a voluntary muscle shown in Fig. 6, going to prevent the invasion of the posterior urethra? No! In 80 per cent or 85 per cent of specific urethritis there is an invasion of the posterior urethra, another factor against the hand syringe that holds only two drams. However, coming back to the subject proper, the germ may travel as follows: From the meatus, along the urethra to one or more of the glands of Littre, Cowper's glands, mem-

branous and prostatic urethra, from thence to the prostatic ducts, terminating here; that is in the prostatic urethra, and not going to the bladder, as this organ is not infected by the gonococci, unless the lining membrane is injured mechanically, or by previous inflammation, because the lining membrane, mis-called a mucous membrane, is in the true sense of the word, a protective, not a secreting membrane. The route then chosen is

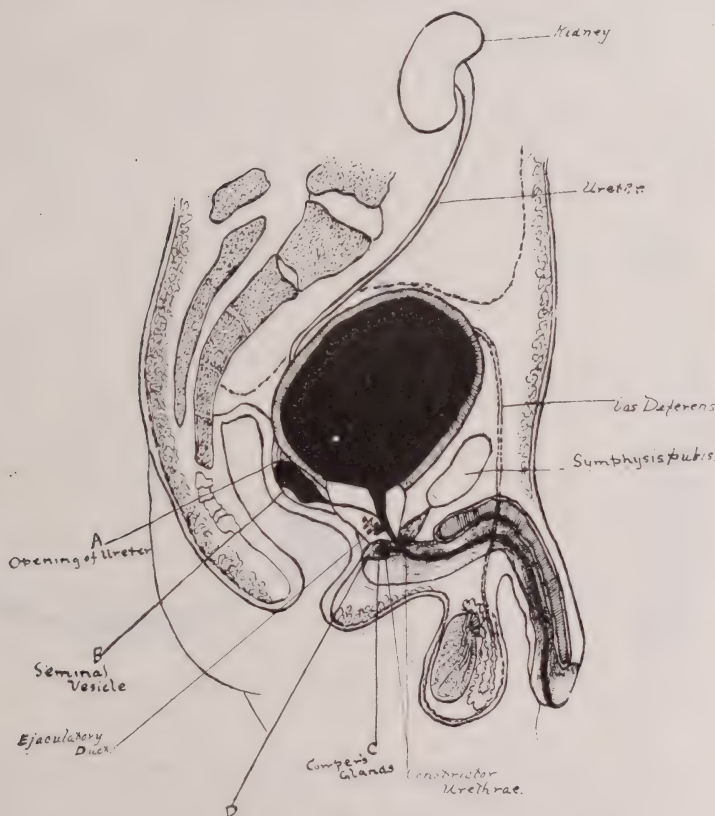


FIG. 6.—Diagrammatic drawing of the whole genito-urinary tract.

along the duct of the seminal vesicle, into the vesicle and thence along the vas deferens to the epididymis and testes.

We have traced the routes of infection. What does it teach? A means of ascertaining conclusively how far infection travels and where it is located—a factor essential to the application of rational and successful treatment. As proof, picture a chronic case of urethral discharge, one that presents the aggravating morning drop that the gallant Frenchman calls "La Gout Militaire." You have all seen this drop. All heard of it. The question is, "Where does it come from and how shall we locate its

source?" With your permission I will attempt to demonstrate my method of procedure, which I have employed for five years, and though simple it is not found in text-books. In outline it is as follows:

The patient shall retain his urine for at least four hours previous to examination in order that the secretions of the urinary tract may accumulate in sufficient quantities for diagnostic purposes. Slide specimens are then taken of the secretion in the anterior urethra. The anterior urethra, that is, from the meatus to the sphincter urethrae, is washed clear by means of a Valentine irrigator used with a normal salt solution, and the washing placed in an ignition tube, Fig. 7, which we shall call No. 1. The patient then voids his urine in three similar tubes, numbered 2, 3 and 4. The presence of shreds in tube No. 2 denotes posterior urethritis, as the fluid that first passes will cleanse this portion of the tract. The amount



FIG. 7.—Glass ignition tube (12 inches by 1 inch.)



FIG. 8.—Cast of normal male urethra.

of inflammatory material in tube No. 3 denotes the severity. The presence of inflammatory material in No. 4, whether the bladder or prostate is involved. When a very warm solution is used it will cause tenesmus, which frequently results in the expulsion of the prostatic secretion and some of the secretion of the seminal vesicles. The patient is again irrigated, this time posteriorly, with a normal salt solution about 600 cc., 60 cc. of which are voided in the ignition tube, which we shall call tube No. 5. This denotes how free from discharge the whole urethra is from the meatus to the bladder, and acts as a means of comparison with the following:

With the solution in the bladder the patient is placed on his back, the seminal vesicles and prostate outlined and stripped, and then a slide specimen is made of some of the secretion expressed at the meatus. If

the prostate only has been massaged, examination of this secretion will demonstrate this by the presence of Betcher's crystals, etc. If the secretion in the seminal vesicles has also been expressed, it is demonstrated by the presence of spermatozoa. The patient now voids the contents of the bladder, which is the remaining portion of the normal salt solution, into a glass urinal. We will then see what has been squeezed from the prostate and seminal vesicles and be able to judge from the megascopic appearance the extent and character of their involvement in the inflammatory process, by comparing with tube No. 5. Could an examination be more clear, simple, or decisive? Yet its real value cannot be shown here, for there is no time to give the clinical and microscopic significance of such secretion.

But you will say that by this procedure only two factors have been ascertained—the location of the infection and the character or presence of invading micro-organisms, but not the character of the pathologic processes. This is true, but the means of ascertaining this fact, as by *bougie-a-boule*, the anterior and posterior urethroscope, etc., is not in the province of this paper.

But should we be satisfied to treat genito-urinary diseases to any degree, knowing only the route which the inflammatory process may take, and not the topography; that is, the shape, size, dilatibility of the canal, etc. The answer is simple; it is "no," for such limited knowledge will not be of practical value if successful treatment is to be instituted. As proof, look at the shape of the normal urethra in Fig. 8. What do we see? It is not a tube of even calibre, but varies, being narrowest at the meatus and in the membranous urethra. Moreover, if we look at Fig. 1 we see that it is always collapsed, and not patent, as one is apt to imagine.

Let us employ these two facts—one, that the tube is not of uniform calibre; the other, that it is collapsible. Again looking at the cast of the normal urethra, Fig. No. 8, we may perceive that its calibre is unequal, that it is narrowest at the meatus and membranous portion and much larger at the bulb. We know actually that it is only distensible to 40 degrees French, in the membranous portion, and 45 degrees in the prostatic portion, to say nothing of the variation that exists in the bulbous portion of the urethra. If this is so, it is not hard to realize why an ordinary sound, which is of uniform diameter, in dealing with a chronic condition or ulceration similar to Fig. No. 3, situated, say, in the prostatic portion, causes one to prefer a dilator. With a dilator you may stretch the prostatic urethra to its maximum and obtain results. With a sound you could not do so, for one could only be passed that is the size of the meatus, the smallest diameter of the urethra.

But with such a varying diameter you may rightly say even a dilator would be inefficient in some cases. This is true, and explains why many

cases of the morning drop are not successfully treated. But why not use the knowledge possessed and a little ordinary horse sense, as it were, and after inserting the sound or dilator into the urethra, apply external pressure with the finger over the pathologic area? Would one not get results? One certainly does!

Other practical facts could be mentioned, both in treatment and in diagnosis, that would tend to prove the value of a mechanical conception of the genito-urinary tract. I have stated only two facts; one, the means of making a diagnosis; the other, a trick, as it were, in treatment; and in so doing I have hoped to aid in advancing the cause of genito-urinary diseases by demonstrating that actual knowledge and reason must supplant empiricism—the snap diagnosis, the hand injection and small syringe—if urethritis and its complications are to be successfully treated.

ETIOLOGICAL FACTORS OF GONORRHOEAL ARTHRITIS.

By H. W. SMITH, M. D., Manila, P. I.

Under this title are included only those cases in which the gonococci are demonstrable. Pyogenic organisms may accompany or replace the gonococci, and in this case the usual serious exudate is purulent. Certain pulmonary affections cause an arthritis not of bacterial origin, and it is said that the toxins of gonorrhoea may produce arthritis and iritis; but it is certainly difficult to believe that a soluble toxine, and one which has eluded discovery, can localize itself in one joint. It is rather to be believed that the organism was not found in some instances owing to the fact that its habitat is frequently in the tissues beneath the serous surface. Simple arthralgia, also said to be of toxic origin, is in fact due to actual infection of a tendinous insertion near a joint.

Gonorrhoeal arthritis is commonly met in two forms: First, the *synovial*, presenting the symptoms of a synovitis with fluid. The organisms are consistently found in the serous exudate or in the flakes of fibrin adherent to the synovia. This variety yields promptly and permanently to lavage of the joint. Second, the *periartritic*, presenting a fusiform swelling especially marked in chronic cases. There may be some fluid in the joint, but the most prominent change is the thickening of all the structures about the joint, the tendon sheaths and bursae being involved. This variety resists treatment most obstinately.

In making a diagnosis the chronic stages are easily confounded with atrophic arthritis and with chronic infectious arthritis, including certain affections loosely classed as chronic rheumatoid arthritis, in which various unknown organisms have been found. Both gonorrhoea and non-specific

diseases of the joints are so common, that the presence of clap shreds in the urine is not sufficient evidence on which to establish the diagnosis.

We may explain extending infections of the genito-urinary tract and peritoneum by continuity along natural channels, by submucous lymphatics, and by the ascending currents in mucous canals described by Bond. But to fulfill the postulate of demonstration of the cocci in joints, it is conceivable only that the organisms have entered the circulation. Once there, their lodgment is determined by the same factors which are operative in pneumonic, tubercular, or pyogenic arthritis, namely:

- a. A slowness of the capillary circulation.
- b. Trauma. It is observed that the susceptibility of individual joints to the affection is proportional to the respective frequency with which they suffer injury.
- c. The predilection of the gonococcus for joints, the joints being numerically second only to the genito-urinary tract in the list of complications.
- d. Tendency in organisms to variation, certain strains of the same organism showing a marked preference for the joints. This tendency is especially noticeable in streptococci and is present in gonococci.

More important than the study of the forces influencing settlement in the body, is the determination of the means by which entrance is gained. This penetration may be accomplished by intercellular absorption without solution of continuity, or through an open ulceration. We know that the gonococcus invades the lymphatics and in this way gives rise to ascending infections and suppurating inguinal and iliac glands, while we do not know that it can penetrate an uninjured capillary. And the frequent association of multiple foci, and the not rare occurrence of a universal infection with an organism normally not viable in the blood, point to a massive invasion. This can take place only from an open ulcer or by the rupture into a vein of a gonorrhoeal abscess. The latter event, although common in tuberculosis, is rare, if not unknown, in gonorrhoea, and the open ulcer must be regarded, at least by clinicians, as the only source of absorption. This implication of the open ulcer is in accord with our present knowledge concerning systemic invasion by other bacteria, and there are numerous observations on gonorrhoea supporting this view. They are:

1. Arthritis rarely occurs in the adult before the declining stage, during and after which the ulcer is the active focus of the disease, whatever factors contribute to its persistence. It seems to occur, too, in the male only when the posterior urethra is involved.
2. Arthritis rarely occurs when the urine shows only a finely divided precipitate, but is always accompanied by clap shreds, which have their origin in a gross lesion.

3. Arthritis may follow immediately the passing of a sound, by which procedure presumably the mouths of vessels have been opened.

4. Absorption is probably possible of indefinite repetition, and may be continuous, since the cure of the joint is obtainable only after the urethral focus is healed. This hypothesis of repeated absorption is important for the understanding of the attacks on successive joints and the recurrent lighting up of quiescent ones; for, while it is possible that the original joint may furnish the atrium for subsequent invasions, it is observed that when other joints are infected later, there is a coincident access of symptoms in the joint first involved, and this would seem to indicate a fresh invasion.

5. As far as we know the gonococcus has no soluble toxine and it provokes no antibodies. An intracellular toxine has been isolated, but its use in the urethra is always attended by a severe reaction not diminishing with repeated inoculations and not conferring any degree of immunity. The quiescence of the gonococcus in a chronic urethra is the result of a mutual tolerance and not of any acquired resistance. Hence its presence in the urethra without subjective symptoms is no indication of equal tolerance on the part of the joints, or of protective substances in body fluids or cells; and immunity from arthritis is gained only when the urine is free from shreds.

In the *Annals of Surgery* for June, 1905, Eugene Fuller cited fifteen cases of gonorrhoeal arthritis, twelve of which were associated with vesiculitis. Cure was obtained after excision of the vesicles. No other treatment apparently was tried and the variety of arthritis was not mentioned. The "Medical Record" of August 26, 1905, spoke favorably of the method in an editorial, and it was because, in a considerable experience in genito-urinary clinics, I had seen no case of associated arthritis and vesiculitis, although I had seen many of each, that I have kept separate records of all cases of gonorrhoea or its complications that have come under my care since July 1, 1905. In examining a patient for vesiculitis, the prostate was massaged and the urethra and bladder thoroughly irrigated. The bladder was then filled, catheter withdrawn, bladder partly emptied to wash urethra, and the vesicles milked. The fluid was passed and centrifuged and the sediment examined microscopically in fresh and stained specimens.

Total number of cases of gonorrhoea..... 46

Total number of cases of vesiculitis..... 4

Total number of cases of arthritis..... 5

In no case of arthritis was vesiculitis found, but in each there were ulcers in posterior urethra. In three cases well defined strictures were undoubtedly the agents preventing healing of the ulcerations. That vesiculitis cannot be the only source of arthritis is well shown by the not

infrequent occurrence of gonorrhoeal arthritis in women and female children, and its appearance in cases of ophthalmia where a urethritis can be excluded. Again, instillations and irrigations of silver nitrate are the most effective means of treatment; these do not affect a vesiculitis but do cure an ulcer, or at least by a coating of precipitated silver prevent further absorption.

The conclusions that seem justified, although tentatively in consideration of a few cases which I am in a position to report, are as follows:

1. Vesiculitis is probably not often the focus of absorption from which arthritis arises. The suggested treatment is therefore irrational; the incidental sterilization of the individual and the severity of the operation are grave considerations making the treatment serious out of proportion to the gravity of the disease; and vesiculitis, which may occur in the course of any gonorrhoea, whether or not believed to be the source of arthritis, can be cured promptly by simple methods.

2. Arthritis in the male is probably due to ulcerations in posterior urethra by which systemic infection is made possible. The prevention and cure of the arthritis depend on the early adoption of treatment directed to the urethral foci and the conditions favoring their persistence.

3. In the female, the failure of arthritis to develop when the infection is limited to the external genitals makes it probable that in them absorption is from an area homologous with the deep urethra of the male.

4. Rarely, other sources must be allowed in both sexes.

MOUNTAIN CLIMATE OF NEW MEXICO.

By FRANCIS T. B. FOST, M. D., Las Vegas, N. M.

Without disputing the economic importance of home institutions for the treatment of tuberculosis of such patients, who either cannot change climate or for whom the mountain climate is contra-indicated, and without denying the fact that in many instances the diseases may be arrested under home treatment, we cannot overlook the great lesson taught by the experience of many years, which has proven by indisputable statistics that a higher percentage of cures of this dreadful disease is produced by a prolonged stay in the higher altitudes.

The teachings of Williams, Amrein, Ruegi, Egger, Liebermeister, Stephani, and others of a few years ago stand unshaken today and are substantiated by daily experience. But we certainly cannot go as far as Liebermeister, who considers cures in low lands only mere possibilities. Altitude and climate must be separated (Jouccoud). While some of the effects of altitude are the same everywhere e. g. diathermancy and chemic

and physiologic influences of solar and ultra rays the secondary effects like polycythemia followed by hematopoetic and tissue changes, with consequent protoplasmic regeneration, are more marked in different climates, depending upon the mean humidity and temperature. Furthermore, the index of air-pressure is different in a humid and arid climate. Naturally the contrasts of winter and summer must vary accordingly.

As compared with the Alps, the Rocky Mountains in Colorado, Mexico and New Mexico, the favorable verdict will fall to the last named territory, because it exceeds the others in lessened contrasts of season, while the index of humidity is the most even during the year.

New Mexico has been erroneously referred to as a wild country or mountainous desert. True, it has not the large cities of the Alps and Colorado, yet in scenery it stands second to none. It has not the historical monuments of Europe, where history is old, but it makes up by one much more thrilling with monuments of an age by-gone and forgotten. The desolated towns and ruins of the Pueblos, with their ancient pottery and sculpture, speak for a relatively high civilization at a time when the ancestors of William Tell still lived in the "Pfahlbauten of the Bodensee."

Against the awe-inspiring glaciers, with occasional cold-storage mountain climbers, New Mexico offers stretches of arid desert, where the bones of the victims of thirst lie bleaching under the cloudless sky; valleys for which there can be but one designation, viz: gardens and forests as balmy as the famous Black Forest. In place of the "Jodelnde Sennerin" we have the shouts of the daring cowboy and the redskin with his aboriginal costumes and customs.

The winters in New Mexico are milder than in the Alps and Colorado, while in the northern parts the summers are cooler, thus offering a more even temperature the whole year around. This is especially true of the eastern slope, which forms a horse-shoe from the Raton Pass to the Glorietta pass at an elevation of about 6,000 to 6,500 feet.

In the southern part of New Mexico we also have evenness of temperature and low humidity, the latter to such an extent that we call that section arid, thus offering the combined therapeutic effect to altitude and desert.

These facts lessen the usual objections or contra-indications to altitude because the gravity of the rarified atmosphere is such as to prove of benefit even to a patient with extensive lesions. The benefit is further enhanced by the hematopoetic processs and cellular regeneration, which is increased by greater water abstraction while the heat abstraction is diminished to such a degree that even enfeebled individuals, who would not be benefited in the Alps or Northern Rocky Mountains, and who are ordinarily sent to Egypt or Arizona, may have their lives prolonged in New Mexico, while suffering from the consequences of the debilitating heat.

Contra-indications to the altitude of New Mexico are practically only two: first, such cases in which the chest expansion due to fibrosis or extensive cavitation is reduced to such a minimum that the available functioning area cannot secure sufficient supply of oxygen from the air; second, where there exists an insufficiency in the pulmonary circulation that the increased work of the lungs would overcome the heart compensation. Such cases are rare. Altitude often has been accused of exciting or augmenting nervous disturbances, especially during the period of acclimatization. Yet the benefits of this relatively dry altitude by far overbalances the slight inconvenience of nervousness.

The health resorts of New Mexico are not very numerous, the United States Government owns two—one at Ft. Stanton for the Public Health Service, and one at Ft. Bayard, for the Army. On the eastern slope mentioned above, between the Raton and Glorieta Passes, at an altitude of about 6,000 feet, the scenery is especially attractive, and there is a number of small towns, of which the best known are Raton and Watrous, with Las Vegas representing a small city. I quote from a report from the Secretary of War to the House of Representatives, in 1902: At the altitude of Las Vegas the air contains only about one-half as much moisture as that at sea line, and even there it averages for the year less than one-half the moisture it can contain (mean relative humidity being about 45, and as low as 20 at times). The rainfall is about 18.25 inches a year, two-thirds occurring in the five warmest months. Rain in winter is practically unknown, all precipitation being a snow.

The average of the total precipitation in the three winter months during ten years, at a point near this town, was 1.09 inches of water, all as snow. These statements show a dry winter and spring. November is also very dry, the greatest rainfall being at the season when wet can most easily be tolerated by invalids. The percentage of sunshine is high, an average for three years showing 280 clear days, 60 partly cloudy or fair days, and only 25 cloudy days, the chief cloudiness of the year occurring in July and August. (In California the greatest rainfall and cloudiness occur in midwinter.)

In the colder winters at this altitude (6,500 feet) the thermometer will go below zero occasionally. In the hottest summers it may reach 90 degrees, rarely higher. The summers are very delightful, the air being dry except just during the afternoon or night-showers, and the nights always cool enough for blankets. The heat of the day is chiefly from 11 a. m. to 4 p. m., and one step from the clear sun into the shade brings coolness at once. One interesting fact is the infrequency with which the great transcontinental storms cross New Mexico; indeed, any severe storms are very rare; tornadoes are utterly unknown, and in Las Vegas the other family pests of much-visited regions (the mosquito and

the flea) do not exist, nor is there any malaria. The climate is typical of the Rocky Mountains, highly stimulating and, on the other hand, in no way tropical. Las Vegas became famous of late on account of an attempt by the different fraternities to establish there one giant sanitarium for their tuberculous members.

Experience has shown that it is always the most prudent for those in whom the disease has been arrested to remain in the climate in which this cure has been effected, and even in this regard New Mexico offers advantages.

...

The Territory being new and sparsely settled, has inducements in agricultural, industrial and commercial exploits for those who must live within her borders, a circumstance the importance of which cannot be underrated when the question of earning a livelihood on the part of the patient is to be considered.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

OBSERVATIONS ON ARTERIOSCLEROSIS.—Heinemann (*Medical Record*, No. 17, 1907). Arteriosclerosis before old age is a disease of exhaustion and of excess. It is increasing steadily in America. Pressure in ordinary physical or mental daily labor, especially in neurotic subjects, acts to cause arteriosclerosis. Certain distinct types present themselves pathologically. The "specific type" involves the aorta generally, and the arteries of the nervous system. It generally leads to aneurysmal formation. The "post-syphilitic" type occurs usually in the ordinary diffuse variety without any specific characteristic lesion. The "senile and labor type" involves the lower extremities, most commonly, and is largely accompanied by calcareous change. The "renal type" is the best understood with its granular kidney, general arteriosclerosis, hypertrophy of the left ventricle, etc. The "myocardial" type is often complicated by embolism and cardiac failure.

The author reviews the symptoms presented by the various types of arteriosclerosis and enters into a consideration of the diagnosis of the disease. He lays some stress upon the pulse tracings and blood pressure as aids to the diagnosis. The treatment is largely one of daily exercise, of the proper sort, baths, diet, which he considers by far the most important of the internal remedies. He speaks of the iodide of potassium, Trunecek serum, nitrites, nitro-glycerine, etc., as adjuvants in the treatment of the disease. He lays great stress on efforts to overcome the anemia.

A CASE OF A POSITIVE AGGLUTINATION REACTION IN ICTERUS.—Christian (*Boston Med. and Surg. Jour.*, No. 17, 1907).—Very soon after the introduction of the agglutination reaction as an aid in the diagnosis of typhoid fever it was noticed in certain individuals, clinically not ill of typhoid fever that their serum also agglutinated typhoid bacilli.

Gruenbaum first pointed out that such an agglutination often occurs in cases of icterus. The author, based upon results of his investigations, believes that there is insufficient evidence for the hypothesis that biliary constituents in the blood serum are the causes of the positive agglutination of typhoid bacilli in icteric cases. The hypothesis that in most cases the reaction is due to bacterio-agglutinins generated independently of icterus is supported by a consideration of the available cases. These bacterio-agglutinins may result from a previous attack of typhoid fever from the presence of typhoid bacilli in some way related to the biliary disturbance, or possibly from closely related bacteria causing a group agglutination reaction.

BLOOD EXAMINATIONS OF ASTHMATIC PATIENTS.—Salecker (*Muenchener Medizin Wochenschrift*, No. 8, 1907).—Made frequent blood examinations of a series of eight cases of bronchial asthma and found that in the intervals between the attacks there is a variation of the white blood corpuscles, in that the polynuclears are diminished as low as 40 per cent., the mononuclears increased to about 45 per cent. and the eosinophiles as high as 12 per cent. Of the polynuclears there is an increase of the double nuclear forms. The mononuclears and the transitional forms are usually greatly increased.

Immediately following the attack there is an absolute increase of leucocytes, most marked in the polynuclears, which may increase to 80 per cent. or more. The mononuclears and eosinophiles undergo an absolute decrease, and at times the eosinophiles seem to disappear entirely. After the attack is complete the polynuclears decrease and the mononuclears and eosinophiles again increase. In the acute asthma attacks the variations are more marked than in the chronic. One is accustomed to find such marked blood reactions only where there is a chemical or bacterial irritation. However, in certain neuroses, as in neurasthenia, hysteria and epilepsy, there is often a marked increase of the eosinophiles.

THE SALT FREE DIET IN CHRONIC PARENCHYMATOUS NEPHRITIS.—Peabody (*Medical Record*, No. 10, 1907).—During the past few years a number of observers in the treatment of chronic parenchymatous nephritis have administered food containing a minimum of sodium chloride, especially in cases of anasarca. The literature is not voluminous, but those who have tried this treatment are enthusiastic about it. The author finds that in many cases soon after the beginning of the treatment, oedema, and with it body weight, will diminish rapidly. The best results are obtained with the patient at rest in bed.

Miller has found that only small amounts of sodium chloride are essential for the animal economy and Bunge states that only one or two grams are necessary daily. Most people, however, consume ten or twenty grams, and the excess is eliminated chiefly through the kidney. Miller finds that in patients with moderately severe nephritis with oedema, that the chlorides are retained, especially if ingested in large amounts. Following this the oedema becomes more marked and the albuminuria increases.

The author reports a series of cases in which he has applied the salt free diet with admirable results. He found in many cases that the headache and dyspnoea were relieved, the fluid disappeared from the serous cavities without tapping and oedema vanished. The diet employed is very similar to that commonly prescribed for nephritis, eliminating only those that naturally contain salt and add no salt at all. This works no hardship upon the patient. On the contrary, prompt relief is usually noted.

THE ROENTGEN TREATMENT OF MALIGNANT TUMORS.—Schirmer (*Centralblatt fuer die Grenzgebiete der Medizin und Chirurgie*, 1-2-3-4-5, 1907).—Presents a most exhaustive review of the literature on this subject, com-

prising some 250 literature references. The history of the treatment is discussed, together with a consideration of the reports of the various authorities on the subject. The consensus of opinion is that the treatment is valuable in superficial new growths, although they may cover a very large area, and that the treatment produces no pain at all. On the contrary, reduces pain, as well as the unpleasant odor emanating from the growth. The results from a cosmetic standpoint are often brilliant. The evidence of improvement occurs usually within two or three weeks and if not manifest within the first month, the treatment may be discontinued. In large tumors an operation should first be performed, and the x-ray then applied.

Bashford finds that a recurrence occurs in from 20 to 40 per cent. of the epithelioma. In cancer of the breast very satisfactory reports have been presented, both with reference to cures and improvement.

The author states that without doubt even in advanced inoperable cases of carcinoma, marked improvement is sometimes produced through the radio therapy. Even the mediastinal tumors following mamma-carcinoma may be favorably influenced by the x-ray. In the treatment of deep seated carcinoma, such as stomach, uterus, etc., no authentic cures have been reported.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

SOME GENERAL PRINCIPLES IN CONNECTION WITH PROTOZOA AS FACTORS IN DISEASE.—Stiles (*Jour. Amer. Medic. Assoc.*, 1907, April 20).

THE TRYPANOSOMES OF MOSQUITOES AND OTHER INSECTS.—Novy, Macneal and Torrey (*Jour. of Infect. Diseases*, vol. 4, No. 2).

With its clear and concise diction, Stiles' paper is decidedly worth reading for orientation about the general principles on which the trend of modern study of protozoic diseases is based by most investigators. The discussion on the definition of what protozoa are, may be omitted here, although the views given are perfectly sane and rational. The point insisted on is that the study of protozoa has only in a few cases led to a complete establishment of their life and their cycle of development, while in a great number of protozoic infections, lately discovered and studied, we are far from such a status as the ideas prevailing are founded only on analogies. This mainly obtains for the theories of the relation of the parasite to the first and second host. For malaria these relations are demonstrated to the smallest detail, while for yellow fever the study has made similar relations extremely probable; the idea that other protozoa follow in their cycle, which by analogy is assumed from the observation of the transmission (certainly, as has been already established, not always) by a second host, has become the object to which the study is in the first place directed. Stiles makes it clear that we have no positive

facts proving this; on the contrary observations made in this regard have been negative, showing that the second host, the transmitting insect, is only a facultative, not an obligatory, carrier, different from malaria. The transmission is only mechanical, not bound to a development and change in the parasite in the insect that only allows of transmission as in malaria. The speculations on the trypanosoma and spirochæte changes in the body of the insect have not been confirmed in any one of them. On the contrary, it can be easily shown that parasites of this character, when ingested into the stomach of a mosquito, will perish within a short time; that such insects, therefore, are able to infect the other host only for a short period after sucking blood from an infected individual.

The few observations published, in which seemingly a cycle within the mosquito was observed, have lost most of their evidential value by work done by Novy and his associates. Aided by his ingenious method of cultivating forms of trypanosoma Novy succeeded in demonstrating that trypanosoma infection is a very frequent occurrence in mosquitoes and other insects, and often escapes the microscopic examination, while the culture will demonstrate it. These parasites are specific for the species of insects examined, as is the human or bovine or horse trypanosoma for the respective species. This discovery is not new, but the extent of the occurrence of this condition was not known before. Much less had it been utilized for throwing light on the observations of alleged developmental changes of parasites ingested with human blood into the stomach of an insect. The importance of Novy's work lies in the demonstration of the necessity of the utmost carefulness in experimentation in order not to bring in relation these parasites to those that have been introduced with blood of an infected animal or human being. The difficulty is increased by the fact that single insects can be carriers of various infections, trypanosomes, spirochætæ and proteosoma-like organisms. The same occurs in vertebrate organisms, where such infections can exist side by side. This finding is of great importance, as it bears on the weight of the work done by Schaudinn establishing the genetic and developmental connection of a proteosoma, trypanosoma and spirochæte in the life cycle carried out alternately in a bird (a species of owl) and in the common *Culex pipiens*. Schaudinn's interpretation of his observations was so convincing, his pictures so demonstrative, his former work on protozoa so classic and so generally confirmed, that it brought about a radical change in the systematic affiliation of protozoa or sporozoa. Trypanosoma was generally considered as only a stage of the cycle of a protozoon, like the plasmodium in red corpuscles for the human malaria that necessitated a sexual process in an insect to be transmissible to its first host again. It is hard to give up the beautiful interpretation of Schaudinn. Still, the work of Novy is so impressive in its objectivity that it at least ought to be made the stimulus to repeat with the same material that Schaudinn used his investigations, with constant attention to the sources of error, that have so clearly and definitely proved by Novy to be constantly present in it. The result will be decisive and will at the same time decide about the nature of *Spirochæte pallida*. Writers on the latter organism have a fancy to adopt another name, *Treponema*, thus positively classing it with the protozoa. The fact is that Schaudinn's

work, which originally suggested this nature of the organism, has by no means been conclusive. In the absence of proof of biologic, morphologic or pathogenic differences between the other spirochætes and the pallida, the latter must remain a spirochæte.

The methods that led to Novy's results are exceedingly original and exact. They hardly allow in their correct application of a doubt of the conclusions drawn from them. The amount of work done on this subject is marvelous, and the manner in which the great difficulties met were dealt with and eliminated by experiment and original devices is admirable. It is work that in its character is the acme of exactness and objectiveness.

A STUDY OF THE INFLUENCE EXERTED BY A VARIETY OF PHYSICAL AND CLINICAL FORCES ON THE VIRULENCE OF CARCINOMA IN MICE, AND OF THE CONDITIONS UNDER WHICH IMMUNITY AGAINST CANCER MAY BE EXPERIMENTALLY INDUCED IN THOSE ANIMALS.—Cowles (*Brit. Med. Jour.*, 1906).—The extremely careful and numerous experiments of Clowes, made at the Buffalo Cancer Hospital, cannot be reviewed in detail. Only some of the most interesting and most important results can be summarized.

Primary tumors can be transplanted only with difficulty. With continuous transplantations their virulence increases and reaches at a time a definite height that is lasting; the rapidity of growth and the size the tumor reaches, increase with the increase of virulence. Spontaneous disappearance varies in reverse proportion to the degree of virulence. The larger a tumor becomes, the less is the chance that it will spontaneously disappear. Tumor cells are very resistant to the action of inorganic and organic poisons (bichloride, potassium, cyanide, etc.). The latter does not kill cancer cells even in doses that kill mice when injected with a mixture of both materials. Chemically, a large number of virulent tumors showed an excess of potassium and of protonucleids; little virulent or slowly growing growths yielded little potassium, but much calcium. Experiments based on this finding gave seemingly by injection of potassium salts, or by their administration by the digestive canal, a higher number of successful transplantations. As to immunity against tumor formation we refer to the following experimental results: Mice that spontaneously recover from a tumor are immune against the same form of tumor, and less susceptible to more virulent forms, than are normal animals. If the serum of mice, recovered from a tumor, is injected in mice on which a tumor grows, a certain influence on the growth of the tumor is observed in its retardation; an emulsion of tumor cells mixed with such a serum diminishes the growth and virulence of the resulting tumor. A mouse with tumor of the head is immune against inoculation of other areas, for instance, the tail, which permits the assumption that the serum of such animals contains protective substances. Tumor cells that are exposed to a temperature of 45 degrees C., or that have been in contact with concentrated chemicals, are prevented from growing; less virulent tumors are stimulated in their growth by exposing them 20 to 30 minutes to temperatures varying between 38 and 40 degrees C.; the gain is a

higher virulence. The author tried to immunize by the injection of nucleo-proteids obtained from tumors, but had no success in obtaining immunity. He compares the immunization of mice against carcinoma with the vaccination against smallpox, since of the animals recovering from the effect of an attenuated cancer, the great majority will not react on the later injection of fully virulent material.

SYPHILITIC ANTIBODIES IN THE SPINAL FLUID OF PATIENTS WITH PROGRESSIVE PARALYSIS AND TABES.—A Marie and E. Levaditi (*Ann. d' l'Inst. Pasteur*, 1907, No. 2).—The method of Wasserman, Neisser and Bruck, built up on the principle of complement binding, worked out by Bordet, is successful in demonstrating syphilitic substances. Marie and Levaditi had positive results in 29 out of 39 patients examined. According to the stage of the disease the findings are once positive in ten cases of beginning paralysis, in 9 advanced cases, positive 7 times, and in 20 very advanced and grave cases, 19 times; so that it appears that the antibodies increase in quantity with the development of the paralytic phenomena; in a patient rapidly succumbing such an increase could be definitely determined. Of these 39 paralytics, 20 at least had previously acquired syphilis. In 4 tabetics and 5 tabo-paralytics the positive result was only 66 per cent., while for the total 39 cases studied a percentage of 73 per cent. was found; study of the cerebro-spinal fluid of other insane individuals was always negative, although two were among them that with certainty had previously gone through the course of acquired syphilis. The authors believe that it is not syphilis itself that produces the specific antibodies but the pathologic changes caused by the disease in the meninges and cortex; probably the antibodies arise in the cells of these tissues.

Morgenroth and Stertz, who likewise examined after the same method 8 cases of progressive paralysis, found antibodies in all of them, while all of the control cases proved negative. The investigations have, therefore, uniformly established the certainty that in finding antibodies the proof can be produced for a previous syphilitic infection. How important this is for the statistical consideration of paralysis is shown, in that only one of the 8 cases of Morgenroth the anemnesis revealed acquired syphilis. As to the frequency of coincidence of previous syphilis with paralysis, the statistics so far compiled are not reliable, as the authors' experience shows. For the present, however, the results of all these investigations cannot serve for theoretic considerations as to the genesis of paralysis and tabes; the results obtained merely demonstrate the remnants of a previous syphilitic infection. To connect them as causative factors with the genesis of those diseases is so far not justified. Much more extensive experimentation will be necessary. However, the work, as far as it has gone, is of great importance and will in the future influence clinical and mainly diagnostic questions to a high degree.

TO THE TWENTY-FIFTH BIRTHDAY OF THE DISCOVERY OF THE TUBERCLE BACILLUS.—Loeffler (*Deutsche Med. Woch.*, 1907, Nos. 12 and 13).

THE STUDY OF IMMUNITY AND ITS IMPORTANCE FOR THE PRACTICE.—A. Wassermann (*Deutsch Med. Woch.*, 1907, No. 16).

THE SERUM-THERAPY OF ACUTE INFECTIOUS DISEASES.—Kolle (*Deutsche Med. Woch.*, 1907, Nos. 16 and 17).

These three papers are only mentioned here as instances of classic representations of problems of the highest importance generally, and especially to medicine. In view of the difficulty to obtain without specialistic knowledge an objective representation of the problems dealt with in them, they give a material that in its absolutely impartial representation and simple interpretation will even to the practicing physician be a source of great instruction. It will result in correct views about the practical application of the facts that investigation has brought out; it will do away with the many unclear conceptions, and especially show the limitation of this application. The language is absolutely lucid and free from many special terms and expressions that so many writers on the subjects seem to believe indispensable. Of great importance is Wassermann's paper is the valuation of the different forms of immunity bodies, the antitoxic and bacterial and bacteriotropic (with us called opsonins) substances. The one-sided enthusiasm for the latter lately finds its proper limitation in this paper. Kolle, too, demonstrates clearly and lucidly the range in which bactericidal sera promise to be utilisable. Many unclear conceptions about their possibilities are properly characterized. Our present status of knowledge of tuberculosis is masterfully presented by Koch's pupil, himself a master, and his paper, like the others, is so comprehensive that, if widely read and considered, they will be invaluable for the elevation of medical knowledge and for clearer ideas about medical problems of massive weight for practical purposes.

DIAGNOSIS.

IN CHARGE OF

ALBERT E. TAUSSIG, M. D.

THE GASTRIC SECRETION IN OLD PEOPLE.—Liefschuetz (*Arch. f. Verd.* 1907, No. 5).—As the result of a large number of tests, Liefschuetz finds that in persons over fifty years old there is usually a lessened degree of acidity of the gastric juice, and that in old people an entire absence of hydrochloric acid is not uncommon. This observation evidently has a direct bearing upon the diagnosis of gastric cancer in the aged. An aid in distinguishing between cancerous and benignant achylia in such patients is suggested by his observation that in cancerous achylia the digestive power of the gastric juice is not increased by the addition of hydrochloric acid. Mett's tubes are placed in two portions of the filtered gastric juice, one of which has been rendered normally acid. If cancer is present, there will be little or no difference in the digestive power of the two portions. He further calls attention to the fact that, as a result of reversed peristalsis, a mixture of bile, pancreatic juice and intestinal secretion may enter the stomach and may render the interpretation of the chemical findings very difficult.

DUODENAL ULCER. — Robson (*British Med. Jl.* 1907, Feb. 2.). Gastric and duodenal ulcer are frequently confused. The duodenal ulcer, however, usually gives a much more indefinite clinical history than gastric ulcer. It is much less amenable to medical treatment and its complications are as a rule more severe, hemorrhage being often rapidly fatal and perforation occurring more insidiously and being more apt to end in death. It occurs more frequently in men than in women and is commonest in middle age. Its most characteristic symptom is pain, usually beginning from three to four hours after eating, when the acid gastric contents are being poured into the duodenum. This pain is however again relieved by taking food, as the acid in the duodenum is then reabsorbed and the closed pylorus prevents the egress of fresh gastric contents. The pain is thus apt to be worst just before luncheon and dinner and at bed time or later. Antacids, lavage or vomiting always relieve the pain, since they neutralize or remove the irritating acid gastric contents. The site of the pain is usually to the right and a little above the umbilicus. It may be either paroxysmal in character or a steady dull ache and is less apt to radiate than in gastric ulcer or cholelithiasis. In duodenal ulcer there are usually periods of remission, when the patient is apparently in good health; these intervals may be weeks or months in duration. The tenderness, which can usually be elicited at the site of pain, is more diffuse than in gall-bladder disease and extends further downward. Spasm of the right rectus muscle is usually well marked during the attack and may simulate the presence of a tumor. As in pyloric ulcer, spasm of the pylorus is usually present and may lead to gastric dilation. Hyperacidity, too, is very constant and constipation is commonly present. Catarrhal jaundice, as might be expected, often occurs and interstitial or suppurative pancreatitis may arise from extension of the inflammatory process into the pancreas. While the diagnosis of a typical attack is usually not difficult, cases may occur, as in gastric ulcer, that produce practically no symptoms until perforation occurs.

A NOTE ON TEST FOR ACETONE IN THE URINE.—Jackson Taylor (*Lancet*, March 23, 1907).—In the sodium nitroprusside test for acetone in the urine, strong ammonia may advantageously be used in place of the potassium hydrate solution. The sodium nitroprusside solution is added to the urine and the ammonia carefully poured on top. If acetone be present, even in minute quantity, a well-marked and absolutely characteristic ring of magenta appears in from one to three minutes. If acetone be present in considerable amount, the magenta color gradually spreads upwards until it prevades the whole layer of ammonia. The addition of acetic acid, as in the usual acetone test, is unnecessary. The sodium nitroprusside solution must always be freshly prepared, though its strength is not important.

OBSERVATIONS ON THE DIAGNOSTIC AND PROGNOSTIC VALUE OF THE EOSINOPHILS IN THE CIRCULATING BLOOD, ETC.—Blumgart (*Med. Rec.* April 6, 1907).—The diagnostic value of the differential leucocyte count in infectious diseases is not generally appreciated. The entire disappear-

ance or very marked diminution of the eosinophiles, together with a distinct leucopenia, goes far to establish the diagnosis of typhoid fever in doubtful cases. A normal or increased percentage of eosinophiles, other things being equal, speaks against typhoid. This holds good, of course, only for the febrile stage of the disease. In cases of undoubted typhoid, the presence of eosinophiles, even in small numbers, during the first week is a favorable sign and speaks for a probable mild type. No typhoid fever patient should be considered cured or dismissed from observation before he has regained permanently a normal percentage of eosinophiles.

THE SOLUBILITY OF CUPRIC HYDRATE IN THE URINE.—Reale (*Wien. med. Wochensch.*, 1907, No. 11).—In Trommer's test for sugar, as is well known, diabetic urine has the power of holding a considerable amount of the copper salt in solution before boiling and, on the whole, the greater the amount of sugar present, the greater the amount of cupric sulphat that must be added before a precipitate occurs. Too much importance, however, must not be attached to this observation, since normal urine may occasionally possess this property to a high degree, due chiefly to the presence of various nitrogenous bodies such as preformed ammonia, kreatinin, xanthin, etc. In chronic arthritis this phenomenon seems especially outspoken.

BLOOD CULTURES IN TYPHOID FEVER.—Roosen-Runge (*Zentralbl. f. Bakt.* XLIII, 1907, No. 5).—As a culture medium for the isolation of typhoid bacilli from the blood, the following is recommended: 1 litre of bouillon made of 0.5 kg. beef and containing 20 g. agar, 10 g. peptone, 5 g. salt and 10 g. sodium glycocholate.

THERAPEUTICS.

IN CHARGE OF

WILLIAM ENGELBACH, M. D.

DIET IN TYPHOID FEVER.—Burzagli (*Clinical Medicine*, No. 41, 42 and 43). — During the course of severe typhoid fever the loss of weight is marked. The one cause for this which cannot be modified is the toxic destruction of the albuminous substances. For this reason the author says that the decreased nourishment usually received by the patient which can be influenced should demand more consideration. He admits that this is no easy task, especially in this disease, on account of the lesions in the gastrointestinal tract, appetite and decreased secretions of digestion. The disadvantage of a pure milk diet is that not sufficient amount can be given daily to provide the proper caloric balance, the liability of its becoming repulsive and the fact that it is a good medium for the development of the bacilli. He recommends "Plasmon" as an additional article of diet especially of value in this disease. It is easily assimilated and well borne even in large doses. Besides this 70 per cent is absorbed from

the rectum when given as an enema. He gives enemata of 20 gm. in $\frac{1}{4}$ litre of warm water four times a day.

THE TREATMENT OF HYPERCHLORHYDRIA WITH CANE SUGAR.—Ribizzi (*Gazette de Degli Osped*, No. 19).—The author reports very favorably on the treatment of hypersecretion and hyperacidity by means of sugar solution. This solution consists of 200 to 250 c.c. of a 66 per cent. cane sugar in water. In addition to this the author gave atropine, stromonii, hyocyami, or belladonna. By this method the total acidity was reduced to normal and the symptoms entirely relieved.

CALCIUM SALTS AS CARDIAC TONICS IN PNEUMONIA AND HEART DISEASE.—Brunton (*British Medical Journal*, March 15).—The author writes very enthusiastically about favorable results produced by calcium salts in preventing cardiac failure in post influenzal pneumonia. He gives them in 5 to 10 grain doses dissolved in water, every four hours. As they are very deliquescent they can only be kept in solution. The disagreeable saline taste is overcome by one minim of elixir of saccharin to the dose. He also used these salts with very good results in cardiac disease exhibiting cardiac insufficiency. In cases of pneumonia where rapid action is desired, the chloride is the better. In cardiac disease other salts, such as lacto-phosphate, or the glycerino-phosphate, may be employed. He thought it possible that the great benefit frequently observed from a milk diet in heart diseases might be due in part to the calcium salts contained in the milk.

TREATMENT OF ECLAMPSIA. — Hirst (*Therapeutic Gazette*, April 15, 1907). — Basing his conclusions upon 86 cases of eclampsia and 278 cases of albuminuria in the maternity of the University of Pennsylvania, the author writes as follows concerning the active treatment of eclampsia: Chloroform is used to avert a convulsion when premonitory signs of the same appear. Blood pressure is reduced preferably by administering an initial dose of 15 minims of veratrum viride hypodermically repeated in 5 minim doses every hour for several doses. Venesection is useless for this purpose on account of the difficulty to withdraw sufficient blood in this condition. Morphine in large doses, $\frac{1}{2}$ to $\frac{3}{4}$ of a grain hypodermically, is indicated in parenchymatous types of nephritis. It is not tolerated in interstitial nephritis. Chloral 30 to 60 grains by enema, is given when the elimination is good. Pilocarpine is dangerous and should only be considered when sweating cannot be produced by other methods (hot packs, vapor baths, etc.). Thyroid extract is of value as a vaso-motor dilator but it has not been given a sufficient trial to warrant definite conclusions as to its active influence. It would seem to be of more value as a preventive than an active agent. Catharsis given in the form of olei tigli four minims in oil, concentrated solution of magnesium sulphate two dr. every fifteen minutes, per orum, or an ounce of castor oil containing four drops of croton oil, introduced through the stomach tube following stomach lavage, have been the methods employed. Diaphoresis is induced by a hot pack, or a hot alcohol vapor bath, the

latter carried out by pouring four ounces of alcohol on hot bricks wrapped in towels and then placing them beneath the covers in such a position that they will not burn the patient. Hypodermoclysis is given, a pint at a time, under the breast every eight hours. Forcible delivery is indicated unless labor is already begun, or the attack occurs early in pregnancy. Of the cases of albuminuria, 278 in number, the amount of albumin varied from a trace to 9-10 of bulk on boiling. In 11 cases labor was induced to avert an attack of eclampsia, all successfully. In 11 others convulsions suddenly appeared, 2 of which ended fatally. So that in 278 patients whose filtered urine showed albumin, eclampsia developed in 3.9 per cent in spite of treatment. Of the 278 patients 40 had had eclampsia in previous pregnancies, but escaped in the present one, under treatment.

TULASE, BEHRING'S NEW REMEDY FOR TUBERCULOSIS. — (*The Dietetic and Hygienic Gazette*, May 1907.) — Tulase, the new remedy for tuberculosis devised and advocated by Prof. Behring is, we learn, when in the pure state, a clear liquid with an amber tint containing all the constituents of the bacillus tuberculosis (Koch). Prof. Behring groups the constituents into three principal divisions: (1) Lipoid substances soluble in alcohol, ether, acetone and chloroform. These lipoid substances are neutral fats and waxes. (2) Protein compounds extracted from the tubercle bacilli from which fat has been removed by distilled water, and 10 per cent sodium chlorid solution. These substances consist partly of nucleoalbumins and of globulins. (3) Proteids which make up the principal constituents of the tubercle bacilli freed from fats and protein.

Tulase is prepared by a very complicated process, which embraces treatment of the bacilli with chloral, by which an active constituent of the bacilli, designated by Behring T. C., is changed so that when tulase is administered either internally or by subcutaneous or intravenous injection, the cells of the T. C. are decomposed and converted into a hypothetical substance designated by Prof. Behring T. X. The administration of tulase, according to Prof. Behring, confers immunity against tuberculosis and hypersensitiveness to Koch's tuberculin.

In the treatment of animals infected with tuberculosis it is recommended that the remedy be administered either by intravenous or subcutaneous injections. The dose recommended by Prof. Behring is 0.01 c. cm., which dose may be doubled at the second application only after a lapse of four days. In two to four weeks the dose is repeated, the same quantities being given as before, with an interval of four days between.

Tulase is put up in glass tubes of 5 c. cm., each, in both 1 and 10 per cent solutions.

The claim is made that tulase is a substitute for tuberculin in the diagnosis of suspected cases of tuberculosis. Caution is given by Prof. Behring against too great expectations in results following the administration of tulase, as the most that should be hoped for the product as a remedy is that its early use in the young may protect against tuberculosis. Curative results are not to be expected when the lung tissue has been destroyed by disease.

THE TREATMENT OF TYPHOID WITH PYRAMIDON. — Leick (*Munch. Med. Wochenschr.*, March 19, 1907).—From his four years' experience the author claims that pyramidon should be ranked high as a therapeutic agent in typhoid. He gives 10 c.c. of a 2 per cent solution for adults, and the same amount of a 1 per cent for children every two hours day and night, unless the temperature falls below 36 degrees C. This treatment is used with exclusion of balneo-therapy. The most prominent features in pyramidon treatment are the absence of apathy, delirium and stupor. The patients complain only of hunger. Temperature is quickly reduced from 40 to 36 degrees C. and even to 35 in some cases and is easily kept below 37. The pulse is decreased but not so easily controlled as the temperature. Delirium of the most severe type is relieved in two days. Appetite soon becomes good so that it is a difficult matter to keep patients on a liquid diet. The author has never observed any dilatory effects on the circulatory system, which have been reported by other authors. These unfavorable results he thinks are due to too large intervals between doses. Vomiting sometimes occurs. The urine turns a high red color, especially in the beginning of the treatment, due to antipyrin component of pyramidon (Dimethylanediaptyrin). He reports 113 cases treated. The diagnosis being confirmed by Widal reaction. Of these 5 cases died between the first and fifth day after entering the hospital. Of the remaining 108 cases he had a mortality of only 6, less than 1 per cent.

STRUMA TREATED BY IODIPIN.—Mollo (*Allg. Wiener Med. Zeitung*, No. 47). — The author contributes to the subject of the treatment of struma by iodipin injections, following the suggestions laid down by Meyer in 1901. The patient, a young woman, married two years, had noticed that for about eight months she had had a slight pain in the right side of the neck. The neck began to swell, and she called in medical aid. After two months' observation, thyroid tablets were prescribed, but they proved of no service. Iodipin, 2 c.c. (30 min.) of the 25 per cent preparation, was then injected every other day. Under this treatment the goiterous swelling disappeared; after the twentieth injection it had totally disappeared. In all, 50 c.c. (1 2-3 oz.) of the preparation were employed.

PRESCRIPTIONS.

ERYSIPELAS (*Jour. A. M. A.*)—The following combinations have also been suggested to be applied locally in the treatment of erysipelas:

Guaiacolis	5 ss
Mentholis	gr. xv
Linimenti Camphorae	3 ij

Apply over the affected areas every two hours.

In strong robust individuals pilocarpine is an old-time remedy, its value lying in its ability to promote elimination by the skin. It may be given as follows:

Pilocarpine Hydrochlor	gr. j
Sacchari Lactis	gr. xij
M. ft. cap. No. viii.	

One capsule every six hours.

Or:

Pilocarpine Hydrochlor gr. j
 Aquae 5 jss
 Ten drops hypodermically every hour until free diaphoresis occurs.

Or:

Liquoris Plumbi Subacetatis f. ʒiii

Add the entire amount to two quarts of warm sterile water, and apply constantly on a soft cloth.

Radcliffe at one time stated that the following combination applied locally had almost specific properties:

Ichthyoli f. ʒij
 Spts. Etheris f. ʒij
 Collodii f. ʒi. jss
 To be applied locally.

SURGERY.

IN CHARGE OF

MALVERN B. CLOPTON, M. D.

OPERATION FOR PERFORATION OF ULCER OF THE STOMACH.—Korte (*Arch. r. Klin. Chir.*, Bd. 81, Th. 1).—In this article the author gives a second series of perforating ulcer cases numbering 19, with 13 recoveries. (In the first series published in 1900, of the 10 operated cases only one recovered, but all the cases came to operation with at least a 24-hour interval after the perforation). In this series of the 6 cases operated upon before 10 hours after perforation all recovered; of those operated between 10 and 19 hours, 5 of the 7 recovered, and of those operated after the 20th hour only one of the 6 recovered. The chief factor is the time after perforation that the operation is done. In the literature since 1902 there are 95 cases of perforation of gastric ulcers reported with 51 recoveries. Of Korte's 19 cases, 12 gave a history of previous pain from the ulcer, but 4 had been entirely free from stomach symptoms. Four of the cases had been previously gastroenterostomised, one 5 years previous, another 3 years before had an anterior gastroenterostomy, a third had a similar operation only 9 months before, a fourth had a posterior gastroenterostomy which contracted after 3 years, and a second fistula was made in the anterior wall, and 9 months later the stomach perforated. Two of these perforations were at the junction of the stomach and gut; one was a new ulcer. The fact that in six years with 19 cases, four perforations occurred after operations which are thought to be curative, shows that we cannot hope that gastroenterostomy will cure all. The cause for perforation was hard to determine except in 2 instances, when the pain followed immediately after lifting heavy loads. Pain is the first symptom, and is constant. (Morphine should never be given as it masks the picture). The most valuable objective sign is tension of the abdominal wall. Tenderness is usually most marked in the

epigastrium. The pulse in the first hour is not a good index; not, in fact, until peritonitis is developed. Liver dullness and free gas in the belly only come later in the disease, and should not be waited for, as the only hope of recovery lies in the earliest operation. Leucocytosis is not regarded as determining, as the observation can in these cases only be made once. The differential diagnosis between perforated appendix, gall bladder or pancreas can often only be determined by operation. Operation in all the cases was under general anesthesia, a long incision through the right rectus exposing the field. The ulcer was either excised or closed without excision. In one instance where the ulcer was so close to the pylorus that stenosis seemed likely after closure, an immediate gastroenterostomy was made. The perforating ulcer was in half the cases at the pylorus or close by; in 5 cases in the middle of the lesser curvature; the others were near the cardia, two at the point of the earlier gastroenterostomies, one in the jejunum below the gastroenterostomy and one in the duodenum.

SILVERIZED CATGUT.—Blake (*Annals of Surgery*, January, 1907).—To take advantage of the antiseptic influence of colloidal silver experiments were carried out to determine the efficacy of impregnating catgut after the manner of Crede. Collargolum was used in a two per cent. watery solution, which does not need to be boiled, as it is sterile. Four coils of catgut, each containing ten strands, are wound on four glass slabs and placed in a jar containing the two per cent. collargolum solution, where they remain a week, the jars being shaken once or twice in the interval. The slabs are then removed, washed in sterile water until the excess of the collargolum is removed, and placed in 95 per cent. alcohol for fifteen to thirty minutes. After this the separate strands are wound on spools under aseptic precaution and are preserved in 95 per cent. alcohol. The tensile strength is greater than catgut prepared by boiling in alcohol, but not quite so strong as chromic gut. The culture experiments showed that the silver not only killed organisms present in the gut, but inhibited the growth of such contamination as followed handling with unsterile hands. Pilcher has used gut so prepared in over 500 operations; during this time there has been a notable absence of infective accidents, and he continues its use.

ARTHROPLASTY UPON THE ELBOW JOINT.—Scudder (*Annals of Surgery*, Feb., 1907).—Three months after a fracture of the olecranon, which had been immediately wired in place, the elbow was found ankylosed at an obtuse angle. Through a long posterior incision the olecranon was divided, all the synovial membrane removed from the joint, and a large fascial flap with some fat attached, was taken from the upper arm, and leaving a pedicle below, it was swung into the old joint. The olecranon was wired in place, the wound closed and the elbow immobilized at a right angle. Motion was begun on the tenth day. The joint continued to improve. Sixteen months after operation there was complete extension, and flexion to less than a right angle. The man who is 48 years old, is able to do all the work about his farm and suffers no inconvenience.

ACUTE DILATATION OF THE STOMACH.—Conner (*Am. Jour. of Med. Sc.*, March, 1907).—This study is based on 102 cases (2 of them observed by the author) and covers the subject most thoroughly. Nearly half of the cases followed operations under general anesthesia, most frequently when the biliary tract was attached, or for other abdominal conditions, but in no instance was there acute dilatation after operation upon the stomach. In ten cases the trouble followed after operating upon other parts of the body. In about half of the cases the vomiting from dilatation merged into the post narcotic vomiting and the dilatation was developed within 24 hours, while in some cases it was delayed from three to seven days. Another group of cases occurred in the course of, or during the convalescence from severe and wasting diseases, such as lobar pneumonia, typhoid, tuberculosis, in which emaciation and prostration were associated with long continued decubitus. Another class of cases developed after injuries, either to the abdomen or to the nerve centers, or some cases developed after indiscretions in diet, such as a single large meal taken by people in good health. Another group of cases is that associated with disease and deformity of the spine, 3 cases having occurred while wearing plaster jackets. Vomiting, persistent, profuse, uncontrollable, was the most prominent symptom and present in 90 per cent. It is usually of a thin watery fluid, slightly stained with bile. There was pain of greater or less severity in many of the cases, and occasionally tenderness. Distension of the upper abdomen was present in most cases. Thirst was intense in many cases, with a complete suppression or great diminution in the amount of urine. Splashing sounds and fluctuation waves aided frequently in the diagnosis, but visible peristaltic waves were usually absent. Next to vomiting the rapid development of collapse is the most striking feature. Three-fourths of the cases died, but this is hardly a correct ratio for all affections with acute dilatation. The morbid anatomy was studied in 69 autopsies and only three times was there obstruction at the pylorus. The mechanism is not well understood but at least half of the cases showed some form of obstruction to the duodenum, and quite frequently it was noted that this was due to pressure of the root of the mesentery containing the superior mesenteric artery pressing the duodenum against the vertebral column behind. Such constriction can occur only when the mesentery is stretched by the weight of the small intestine hanging over the brim of the pelvis, the patient being on the back and the small gut collapsed. Great dilatation of the stomach would increase the liability to mesenteric obstruction by crowding the intestines into the pelvis and by preventing their escape from the pelvis, rendering such obstruction, when once formed, more complete and permanent. If treatment is instituted before collapse and extreme prostration it has been in most cases most gratifying. First empty the stomach with a tube, and repeat the emptying several times in the 24 hours. To relax the tension on the mesentery, and thus to relieve the mesenteric constriction to the duodenum, the patient should be turned from the back to lie on the belly, and if they are again put in dorsal decubitus the position must be reversed from time to time until the stomach tone is regained. The lack of fluid must be replaced by salt solution, as by enemas or by hypodermom-

clysis. Operative interference has not been very successful except in those cases where there was found a kink in the duodenum which could be relieved. Opening the stomach to drain, or gastroenterostomy has been very unsuccessful. Conner reviews Kelling's experimental work and also his own.

THE TREATMENT OF FISTULA OF THE PANCREAS.—Heineke (*Zentr. f. Chir.*, 1907, No. 10).—The duration of fistulæ after opening a pancreatic cyst or draining a ruptured pancreas and the excoriation accompanying, make very trying conditions to deal with. To avoid the maseration of the skin and also to shorten the time of healing, the hydraulic empyema apparatus of Perthes is used. The eventual closure of the fistula is brought about by using the suggestion of Wohlgemuth, who found that with a fat diet the secretion was lessened, with a proteid diet the secretion was increased while with a carbohydrate free diet the secretion was practically stopped. Further he noted that with an acid the secretion was increased while alkalies decreased the flow. A combination of a diabetic diet with small doses of sodium bicarbonate decreased the flow and allowed a fistula to close in a very short time. A case is reported of a traumatic rupture of the pancreas drained through the gastro-colic omentum that secreted 500 c.c. a day for a time, then closed spontaneously for a day, to again break open and discharge from 50 to 100 c.c. a day. Three days after beginning a carbohydrate free diet the fistula closed.

ORTHOPEDIC SURGERY.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

THE OPERATIVE TREATMENT OF WRY-NECK.—Gerdes (*Zentralbl. f. Chir.*, 1907, XXXIV, 145). The author calls attention to the fact that the total, or partial, extirpation of the contracted sterno-mastoid muscle, as advised by Mikulicz, has resulted favorably in most instances, but recurrences have taken place. Trendelenburg has advised in addition a thorough division of the cervical fascia, and Wullstein has supplemented this by recommending a shortening of the stretched muscle on the opposite side. Other muscles than the sterno-mastoid are involved; as the scaleni, levator anguli scapuli, and the acromial portion of the trapezius. The anterior scalene is the most frequently involved. Gerdes gives this method of dividing the sterno-mastoid as well as this anterior scalene muscle. He makes an incision transversely, 5 to 6 cm. long, a finger's breadth above the clavicle, beginning over the sternal portion of the sterno-mastoid. After dividing both origins of this muscle, the cervical fascia posterior to it is opened freely, and the external jugular vein exposed. The omohyoid muscle is retracted upward and outward, and the external jugular vein inward. The anterior scalene muscle is thus exposed, with the phrenic nerve lying on it and the brachial plexus ex-

ternal to it. These structures are carefully isolated from the muscle, and it is carefully divided just above the subclavian artery. By enlarging this wound, the scalenus medius may also be divided. The wound is then packed with gauze for forty-eight hours, and is permitted to heal by granulation. After four days, active and passive movements are begun, and continued for six weeks. This operation, the author states, gives satisfactory results, even in old cases.

A NEW METHOD OF DRESSING OBLIQUE FRACTURES OF THE LEG.—Desguin (*Jour. de Chir. et annal. de la Soc. Belge de Chir.*, 1907, VII. 78).—The author states that he is in favor of an open operation for these cases, and believes that only by such an operation can a complete anatomical cure be effected. In many cases conditions are encountered which render operation out of the question, and one encounters here great difficulty in securing a suitable reduction of fragments. He offers an apparatus which consists of two inferior plates, which are fixed to the limb below the fracture by a cuff of plaster of paris. Two superior plates are fixed to the limb above the fracture. Each inferior plate is furnished with a kind of rack fixed transversely and containing several deep notches. Each superior plate carries also a transverse plate, which is perforated with four or five rectangular openings. These transverse plates, the upper and lower, are held together by two long bolts, with nuts on each side of the leg, fitted into the rectangular openings of the upper plates, and the corresponding notches of the lower. This apparatus allows motion at the knee and ankle, and does not produce atrophy and disturbance of circulation, as do appliances covering the entire lower extremities.

GONORRHEAL JOINT DISEASE.—Nathan (*N. Y. Med. Jour.*, March 16, 1907).—Gonorrhoeal joint disease, with the exception of the mild evanescent cases, which are due to toxemia, is really a pyemic condition. The gonococcus directly invades the affected tissue, and the foci are located either in the synovial membranes, constituting an arthritis, or they are in the articular ends of the bones, constituting an osteoarthritis. In osteoarthritis, the bone focus is always primary, and is never caused by extension of the inflammation from the interior of the joint. Hence, a gonorrhoeal arthritis remains an arthritis and never involves the bones, no matter how long it exists or what its intensity. Gonorrhoeal joint disease may be recurrent, but never chronic. The cases which have been called chronic are those in which the initial acute inflammation has left behind bands of adhesion or other structural change in the synovial membrane in arthritis, and bone outgrowths, or ankylosis, in osteoarthritis. These changes, unless treated mechanically, or by operation, are permanent. The treatment during the acute stage must be on general lines, and must depend upon existing conditions. The treatment of deformity must be based upon the same principles which govern the treatment of all deformities. Cases that are treated properly during the acute stage will usually get well without disability. It lies with the general practitioner and the genito-urinary surgeon to prevent the serious, often life-long disability, which sometimes follows in the train of a gonorrhoeal joint infection.

A CASE OF CONGENITAL ANTERIOR DISLOCATION OF THE HIP.—Ryerson (*Amer. Jour. of Orth. Sur.*, April, 1907).—Only seven or eight cases of this form of dislocation are reported in the literature. The author adds his case merely for record. Child two years and seven months old. Began to walk at fourteen months and an inequality in gait was noticed almost immediately. Never complained of pain or discomfort in hip. Examination showed slight limp on left side, three-fourths atrophy of thigh, five-eighths-inch shortening. No lordosis. Trochanter about five-eighths-inch above Nelaton's line. All motions of joints free except abduction, which is only two-thirds of normal. Head of femur plainly felt below anterior superior spine of ilium, and great trochanter felt almost directly behind the head when foot is pointed straight forward. The x-ray shows head above the acetabulum, and resembled the picture of ordinary backward dislocation. Case was not operated upon.

EXOSTOSIS IN THE PLANTAR PORTION OF THE OS CALCIS.—Bradford (*Amer. Jour. of Orth. Surg.*, April 1907).—Under certain conditions, not as yet thoroughly understood, abnormal bone growths are developed at the insertion of important muscles which are subject to strain. The os calcis, subjected as it is to injuries and strains, affords abundant opportunity for these conditions, inasmuch as the tendo achilles arises from its upper and posterior portion, and the plantar fascia from its lower portions. Baer has reported several cases of blenorrhagic exostoses, but the author reports several cases where no blenorrhagic conditions ever existed. Examination of ninety specimens of health normal os calcis showed that the condition is not one of great rarity. It does not present much occasion for alarm, beyond a certain amount of fatigue after the patients are obliged to stand continually on their heels. Where the exostosis becomes unusually large, operation is necessary. Non-operative methods afford relief. These are the application of a cork-sole, or the wearing of a cushioned heel for several months, and the avoidance of long standing.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON.

PERITONEAL PROSTATECTOMY AND TRANSVESICAL PROSTATECTOMY, METHOD OF FREYER: A COMPARATIVE STUDY OF THE TWO METHODS.—Castano (*Ann. des Mal. des Org. Urin.*, March 15, 1907).—Transvesical prostatectomy is a simple operation, and one more easily performed than perineal prostatectomy. The opening in the bladder gives the great advantage not only of ascertaining its condition, but also of facilitating the extraction of the vesical lobes and calculi, so common in these cases, a thing which is almost impossible to be done by the perineal route, especially in the obese. In total prostatectomy, which ought always to be done, the posterior urethra is sacrificed in the perineal method, while

it is left intact in the transvesical. In the latter the duration of the operation is much shorter. Then, too, wound of the rectum, which is quite usual in the perineal, is impossible in the transvesical. Impotence is a natural consequence in the perineal route; in the method of Freyer it is a rarity, since, as a rule, the seminal vesicles are respected. As drainage is much better by the perineal route, in the urgent cases, in those where it is impossible to disinfect the bladder the perineal is the route of choice. The results obtained by the method of Freyer are quicker, better and more complete. As the surgeon improves his operative ability his mortality becomes less, so that it compares favorably with those done by the perineal route.

GNORRHEAL PERITONITIS IN THE MALE.—Thomas (*Northwestern Medicine*, April, 1907).—A peritonitis may be developed from an acute seminal vesiculitis, the infectious process then beginning in the recto-vesical pouch where it may localize itself, or may spread indefinitely from that morbid centre. Two cases are reported, one occurring during an acute attack of gonorrhea, complicated with epididymitis and seminal vesiculitis; the other case gave no history of gonorrhea. At the operation the intestines and peritoneal surfaces low down in the right iliac fossa were covered with a flocculent lymph. There was no pus. The appendix, which was red and swollen, was removed. It was apparent that the condition of the appendix was secondary to the localized peritonitis. There were no ulcers in the mucosa and no evidence of perforation. Diplococci, which were decolorized by the Gram stain, were discovered in the pus which later discharged from the wound.

TREATMENT OF PROSTATIC CONGESTION BY ELECTRICAL METHODS.—Rolton (*The Lancet*, April 13, 1907).—In congestion of the enlarged prostate, electrical applications meet the indications of relieving local stasis, of restoring the circulation and improving the tone of the muscle fibres of the bladder. In electricity we have a certain relief for all cases except those in which a malignant or tuberculous process is present, or in cases in which there is fluctuation from the presence of pus. The degree of success in the treatment depends upon the amount of hyperplasia or degeneration that has taken place in the structure of the gland. In the early stages of the affection a complete cure is uniform. Two cases are reported which tend to confirm the above conclusions.

THE HEMATURIA OF CHRONIC NEPHRITIS.—Chute (*Amer. Jour. Urol.*, March, 1907).—After a thorough consideration of the subject the author gives the following conclusions: One may see in cases of chronic nephritis renal hematurias. Some are slight, others produce great debility by their long duration, or even threaten life by their profuseness. To this class, probably belong many of the so-called "essential renal hematurias." These hematurias may have as their underlying cause a nephritis of either toxic or infectious origin. A nephritis of infectious origin is unlike a toxic nephritis, in that it may be limited to one kidney or part of it. Though many cases do not give a distinctive

clinical picture, a diagnosis can probably be made in a considerable proportion of them. A recognition of the hematuria of chronic nephritis is important that the condition may not be confused with a more serious renal lesion, and a kidney be unnecessarily sacrificed.

Under operative treatment, a considerable proportion of these cases have recovered. Our knowledge of the condition is not sufficient to allow one to formulate definite rules as to the best operative procedure in each instance. There are not at present a sufficient number of carefully reported cases to allow one to compile useful statistics. Careful observation of similar cases as they arise, combined with a thorough bacteriological study of the urine, as well as of the microscopic pathology of the kidney, will doubtless do much to clear up many points that are at present in doubt.

OBSTETRICS AND GYNECOLOGY.

IN CHARGE OF

HUGO EHRENFEST, M. D.

CHOREA DURING PREGNANCY.—Wm. Fletcher Shaw (*Jl. of Obstet. and Gynecol. of British Empire*, April, 1907).—In this paper 11 cases of chorea of pregnancy are recorded, which occurred in the practice of St. Mary's Hospital in Manchester, within 15 months. The first two cases were treated on traditional lines; the results were bad. Both patients died. The treatment resorted to was: Nourishing diet, arsenic, aspirin, and strychnine, and finally artificial induction of labor. In view of these results it was decided to try a totally different antitoxemic treatment, as first suggested by Fothergill. Nine patients were treated in this manner with the best results. The idea underlying the experiment was, that the toxemia of pregnancy lowers the resistency of the nervous system and puts it in a state of heightened irritability. It thus responds to stimuli, chemical, emotional, etc., which would not otherwise produce any effect perceptible by ordinary clinical methods of observation. If this supposition is correct, this class of cases comes within the same category as hyperemesis, eclampsia, and the other toxemias of pregnancy, and should be treated as such. On this assumption the subsequent nine cases were treated with the view of eliminating any toxins which might be present. The patients were kept quiet in bed on a strict milk diet, bowels freely opened with pulv. jalap. comp., the action of the skin and kidneys being stimulated by means of diaphoretics and diuretics. Thyroid extract was also given to five of the patients, commencing with 15 grains, and in a day or two being increased to 30 grains daily, one patient even having received 40 grains per diem for three days. Every patient under this treatment showed signs of improvement in the course of a few days; improvement progressing slowly until finally each was discharged from the hospital cured. Induction of labor seems strongly contraindicated by the results of these cases. From exact observations it would seem that the thyroid extract does not play a very important role in this treatment.

BACKACHE AND GYNECOLOGIC TROUBLES.—Lomer (*Zentralbl. f. Gyn.*, No. 13, 1907, p. 366).—About every third or fourth patient consulting a gynecologist complains of backache. Often the presence of a retroflected uterus may be ascertained. But even a restoration of the malposition to normal may not relieve the pain. Lomer first of all asks the patient to point out exactly the location of the pain. A backache above the level of the umbilicus, in his belief, is not caused by any gynecologic anomaly. If located below the umbilicus, the writer carefully questions the patient whether this pain is relieved by bedrest. If this is the case the possibility of an inflammatory process as its cause must be considered first of all. If not improved by rest, if it is worse in the morning, then it is due usually to muscular weakness produced by a uric acid diathesis, which can be satisfactorily treated with aspirin. If the patient is unable to give precise answers, if she complains that the pain comes very irregularly, but especially after psychic emotions, a suspicion of hysteria is justified and careful search for positive symptoms of this disease necessary. Backache accompanied by profuse purulent or especially hemorrhagic discharges (menorrhagia and metrorrhagia), as a rule is the result of a general debility and can be relieved by means of iron preparations after the uterine discharge has been stopped.

STATISTICS CONCERNING PLACENTA PREVIA.—Buerger and Graf (*Monatschr. f. Geb. u. Gyn.*, vol. 25, H.1).—Among 44,676 labor cases, attended in Schauta's clinic in Vienna within the last 13 years, 342 cases of placenta previa were encountered. Of these number 63 were of the central type, 123 of the partial and 156 of the lateral. The method of choice in the treatment of this complication of labor is bimanual version, without extraction, after Braxton-Hicks. Other methods are applied only if demanded by certain conditions. The results are decidedly satisfactory as far as the maternal mortality is concerned, the average maternal mortality for all three types of placenta previa being 5.85 per cent. Less satisfactory is the accompanying fetal mortality of 45 per cent. Improvement in this respect seems highly desirable, but certainly not by the use of methods which would tend to increase the danger to the mother as is the case with Cæsarian section.

HYPEREMESIS GRAVIDARUM.—K. Baisch (*Berlin. klin. Woch.*, No. 11, 1907).—From the standpoint of etiology chiefly, three forms of hyperemesis are to be differentiated: First, those cases in which the exaggerated vomiting is brought about by anomalies of the central nervous system, hysteria being the most important. Secondly, cases in which the emesis is due to a gastric disease. In the last group the hyperemesis is the result of an overproduction of certain substances within the uterus, which cause vomiting. Proper therapy must take into consideration these three etiologic factors. In cases of the first group the best results are obtained by bedrest, especially if the patient is placed in a hospital. The cases of the second group readily improve under proper dietetic treatment. In the third group the medicinal therapeusis is of importance. Good results are obtained with the administration (hypodermic) of scopolamine in doses of three to five-tenths of a milligram, about twice

a day. Diuresis and intestinal peristalsis are to be encouraged. If such a patient, in spite of energetic dietetic and medicinal treatment, is losing in weight, the pregnancy must be interrupted quickly.

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

SPLenic ANAEMIA IN CHILDHOOD.—Labbe and Aubertin (*Rev. Mens. des Mal. de L'Enf*, February, 1907) find that the essential characteristics of all splenic anaemias of childhood are: (1) Splenomegaly. (2) Anaemia sometimes evidenced by lowering of the hemoglobin percentage, sometimes by diminution in the number of reds, most often mixed forms. (3) By the presence of a large number of nucleated reds. The secondary and variable characteristics of the different forms are as follows:

- (a) Reaction with a predominance of myelocytes (myeloid splenic anaemia).
- (b) Reaction with a predominance of lymphocytes (lymphatic splenic anaemia).
- (c) Reaction with excess of eosinophiles.
- (d) Mixed reactions.

Though it is true that the characteristics in the first category are the only ones necessary for the diagnosis of splenic anaemia, and though the variations of the second group are almost infinite, it is nevertheless true that these variations are of great importance. Their hematologic diversity is more apparent than real. All splenic anaemias are accompanied by a greater or less degree of myeloid reaction, and though in certain cases it would appear that non-granular mononuclears predominate, it is not to be considered that this would speak for a special form; since we know that myeloid tissues can also produce these mononuclears. The clear-cut division between myeloid tissues and lymphoid tissues with resulting reaction on stimulation which obtains in the adult does not obtain to nearly the same degree in the infant, who reacts with the simultaneous production of both myeloid and lymphoid cell forms, in many cases. Indeed, in all autopsies in cases of infantile splenic anaemia, there is found as a substratum a myeloid proliferation of a type, more or less advanced, located not only in the spleen and bone-marrow, but also in the lymph-glands and the thymus.

DIAGNOSIS OF TUBERCULAR BRONCHO-PNEUMONIA IN INFANCY. — Mouriquand (*These de Lyon*, 1906, *Arch. de Med. des Enf.*), as a result of the study of 190 cases, finds that tubercular broncho-pneumonia is the most frequent form of tuberculosis in early and late infancy. It is difficult to distinguish this form from simple broncho-pneumonia. According to the author much importance is to be attached to the presence of very fine rales, and the absence of larger rales in the larger bronchi. The

lesion is more frequently located at the base than at the apex; indeed, the apical lesion is not characteristic of the tubercular form. The onset is very often that of an ordinary broncho-pneumonia, the more typical signs not showing themselves until the twelfth or fifteenth day. There is marked dissociation between the auscultatory findings and the general symptoms. In early infancy the cases are apt to run an apyretic course while in later infancy there is more apt to be a tubercular fever curve. Enlargement of the peripheral glands is *not* a sign of diagnostic value unless the glands are of considerable size, with tendency to softening. Albuminuria is rare. In many cases there is enlargement of the liver and of the spleen. The autopsy in these cases practically always shows tubercular disease of the bronchial glands. The diagnosis of this condition must necessarily rest more on the physical findings and general symptoms than on the results of laboratory tests, inasmuch as the latter afford no definite means of localization of the lesion.

IMPAIRED REASONANCE BEHIND AND BENEATH THE INNER THIRD OF THE LEFT CLAVICLE IN NORMAL CHILDREN.—Hamill (*Arch. of Ped.* February 1907), says that this dulness exists in the chest of the majority of infants and children in perfect health. It is more difficult to elicit in infants than in older children and it persists throughout childhood. This dulness can be elicited by percussion of the clavicle and by percussion in the first interspace just beneath the clavicle, and can be heard best with the child in a recumbent position. Its probable explanation is the fact that the posterior position of the lung in early life brings the great vessels into more intimate contact with the anterior chest wall. The importance of the sign lies in the fact that this area of dulness may be misinterpreted as indicative of a pathological lesion.

IMPRESSIONABILITY OF CHILDREN UNDER THE INFLUENCE OF SURROUNDINGS. — At a recent Congress of Hygiene of Children in Berlin, Baginsky read a paper with this title.—(*Der Kinderarzt*, February, 1907).—Baginsky finds that children possess in marked degree adaptability to their surroundings. This is noted in healthy as well as in sick children. Even very small children, for instance, who have been restless and much disturbed for several days, become quiet on admission to hospital. Thus, Baginsky has seen torticollis and enuresis cured by sending the children to a hospital. This tendency of adaptation to surroundings is particularly well illustrated in the case of nervous children in whom the psychic influences are apt to be very marked. The force of imitation and association is a very powerful one in childhood. The imagination of the child is very active, and in this fact is to be found the origin of the phantasy, the fear and also the deceit of childhood. The practical importance of these facts so far as the care of children is concerned lies in the necessity of putting children into the most favorable surroundings. This may frequently be utilized in the therapy of many of the illnesses of childhood.

TUBERCULAR LYMPHADENOMA IN CHILDHOOD. — Weill and Lesieur (*Arch. de Med. des Enf.*, March, 1907), as the result of their studies of this subject reached the following conclusions:

(1) Tuberculosis may cause in the child a chronic generalized adenopathy with the appearance of typical lymphadenitic tumors (tubercular lymphoma).

(2) This tubercular pseudo-lymphæmia may be accompanied by enlargement of the spleen, of the liver, and by anaemia (aleukaemic pseudo-lymphæmia).

(3) The clinical evolution may be febrile, the fever being of continuous, intermittent, or inverse type.

(4) Histologically, this tubercular adenopathy differs from an acute tubercular adenitis by the predominance of sclerotic lesions and by the absence, or very slight degree of caseation.

(5) Tuberculæ bacilli isolated from these tubercular lymphomata can adapt themselves to lymphoid tissues as shown by the production in the guinea pig of a tuberculosis of slow evolution affecting the glands almost exclusively, a true experimental tubercular adenopathy.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

A CASE OF SUCCESSFULLY OPERATED SPINAL CORD TUMOR WHICH RAN A COURSE WITHOUT PAIN.—Sturnsburg (*Deutsch Zeit f. Nervenhek.*, Bd. 32, heft 2-3).—This is an account of an interesting case of spinal cord tumor in a man 48 years old which was operated upon successfully. During the whole course of the disease there was never any pain or any suggestion of an irritative lesion. The legs showed a spastic paresis with all the signs that usually accompany such a condition, Babinski klonus, etc. The sensation was from the beginning much involved so that the localization of the tumor was made possible by this alone. The tumor was localized at the tenth dorsal segment. The tumor was found in that place and was removed without any difficulty. The author concludes as follows from this experience: In the presence of symptoms which point to a progressive process in the spinal cord which seem to indicate that the original location of the lesion does not alter but remains more and more expressive of the growing symptoms, we are justified in suspecting an extramedullary growth. Furthermore we are justified in advocating its surgical removal even if during the whole course of the disease there is no pain or irritative symptoms.

ANOTHER CASE OF TEMPORARY FAILURE OF THE KNEE JERK IN HYSTERIA.—Wygand (*Neurologisches Centralb.*, No. 7, 1907).—Binswanger, in his well known monograph on hysteria, has made the statement that an absence of the knee jerk does not occur in hysteria. Two cases of such a disappearance have been published by Nonne and has thus far

escaped the criticisms that have been directed against them. The author gives an account of a case of severe hysteria in which the knee jerk disappeared and where it could not be obtained even with the greatest care and in all sorts of positions and with the re-enforcement procedure. It was a case of hysterical paralysis and the knee jerk was absent during the most pronounced period of the paralysis. It is probable according to the writer of this paper that more cases can be found, if they are carefully searched for. He therefore stands opposed to the dictum quoted in the beginning of this abstract and as far as can be seen from his clinical report the case seems to prove his contention that in certain circumstances in hysteria there can be a temporary absence of the knee jerk.

EPIDEMIC CEREBRO-SPINAL MENINGITIS.—Fowler (*Rev. Neurology and Psychiatry*, April, 1907).—This is an interesting paper on a subject that is of much importance at the present time. The material is sufficiently large to warrant some general conclusions and the post mortem examinations were made with great care. The material embraces twenty-three cases with fourteen post mortems. These are some of the conclusions: The commonly accepted etiology is that the micro-organisms gain access to the brain from the nasal cavity. There is no clinical or pathological evidence in this series of cases to support this view. There seems to be certain facts tending to support the view that in cerebro-spinal meningitis the cord lesion is primary and that the diplococcus invades the nervous system through the spinal meninges. In most cases the post mortem appearances show that the cord lesion is of older standing than that of the brain. The constant early and complete abolition of the abdominal reflex seems to point to the early implication of the lower dorsal cord. The therapeutic effect of lumbar puncture was found to be minimal, but from the point of view of diagnosis this procedure was found to be of the greatest importance. The characteristic symptoms of the disease in the beginning are often of so slight a nature that a diagnosis is impossible without the result of the examination of a specimen of cerebro-spinal fluid.

THE DIAGNOSTIC VALUE OF LUMBAR PUNCTURE IN PSYCHIATRY.—Pomeroy (*Jl. Nerv. Ment. Dis.*, April-May, 1907).—This is an account of one year's experience at the Manhattan State Hospital on the value of lumbar puncture in the diagnosis of the insane. This is an extensive paper and the material is large enough to give some warrant for the conclusions expressed. Especial attention is given to the technique and likewise to the danger attending the procedure. The literature is likewise carefully gone over so that the article gives in a compact form the knowledge that we possess on this subject so far as it concerns the insane. The following are some of the conditions: 1. Patients should not be punctured unless they can be put to bed. 2. To be of definite value the puncture must be repeated two or more times at an interval of at least ten days. 3. A constant negative finding is of more value than a positive one, for it rules out the presence of brain syphilis and parasymphilitic conditions. 4. In general paralysis the lymphocytosis is a constant and early sign and is usually associated with a heightened albumen content.

The same can be said for tabes. 5. Lymphocytosis may occur in secondary or tertiary syphilis without clinical evidence of involvement of the nervous system; also it may occur in patients who give evidence from scars or other signs of old syphilitic infections. As a rule the cellular increase in such cases is far behind that observed in paresis and there is very slight albumen increase. Where inflammatory brain syphilis exists albumen increase may also appear. 6. In arteriosclerotic insanity a positive finding points to syphilitic process such as softened foci following arterial disease. In brain tumors a negative finding is the rule. If a positive finding occurs a syphilitic basis for the process can be taken for granted. 7. Epilepsy shows negative findings; if otherwise the suspicion of brain syphilis is justified. 8. Alcoholism in all its varieties gives negative results; if the finding is positive and there are no signs of nervous involvement, an old syphilitic process may be taken for granted. Where symptoms of involvement of the nervous system are present general paralysis or brain syphilis is to be suspected. 9. A differential diagnosis is to be made between brain abscess and meningitis by the presence in the latter of increased cellular material. 10. It cannot be enough emphasized that the lymphocytosis presents a singular disease sign and only after consideration of all other clinical symptoms of the disease should it be used to construe the case. When the findings are construed with due care to the possibilities the results obtained from lumbar puncture are an important and oftentimes an invaluable aid to the diagnosis of obscure nervous and mental diseases. It is of especial importance in differentiating alcoholism, general paralysis, dementia praecox, epilepsy, brain tumor and brain syphilis.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

TREATMENT OF HYPOPION BY CAPILLARY DRAINAGE OF THE ANTERIOR CHAMBER.—Rollet and Moreau (*Rev. Gen. d'Ophthalm.*, November 30, 1906).—Speaking generally, when a layer of pus exists which reaches to two-thirds of the distance from the limbus to the pupil, the authors hold that the anterior chamber ought not only to be opened at once, but also drained. Capillary drainage is practiced by Rollet in the following manner: With a Graefe knife the cornea is punctured at the limbus at a point half way between the inferior border and the pupillary aperture. The knife passes through the purulent mass and the counter puncture is made at the limbus, and is enlarged by slightly raising the handle of the knife. The instrument is then withdrawn without cutting the remaining bridge of cornea. A horsehair of medium calibre and 5 or 6 cm. in length is introduced and passed across the anterior chamber through the pus and out at the wound of counter-puncture. The hair should extend on either side about 2 mm. beyond the cornea. The lids are closed and an occlusive dressing is applied to both eyes. The following day the

pus is found to have completely disappeared. The drain may be left in place for forty-eight hours.

It is necessary to curve the hair in order that it may more readily enter the point of exit. Sometimes it may be necessary to pass the needle of a syringe and then to pass the hair through its lumen. The needle is next withdrawn and the drain left in place. It is not necessary to remove the purulent mass, as it will have completely disappeared next day. Sometimes the cornea is sectioned by the drain, but when the hair becomes free cicatrization has already taken place behind it and there is never prolapse of the iris. The dressing is placed on both eyes in order to restrict the movements and to limit the possibility of the drain coming out. The authors publish particulars of 17 cases which have been treated with success by capillary drainage.

CASE OF RODENT ULCER OF THE CORNEA CURED BY TRANSPLANTATION OF CORNEAL TISSUE FROM THE RABBIT.—De Berardinis (*Annali di Ottalm.*, 1906).—This was a case of Mooren's ulcer, traumatic in origin, in which ordinary therapeutic measures had failed to arrest the onward progress. De Berardinis excised the whole ulcerating surface by cutting 1 mm. down into the cornea in front of the infiltrated margin of the ulcer to a depth of $\frac{1}{2}$ mm., and then cutting horizontally outwards underneath the ulcer. A flap taken from the cornea of a rabbit was kept in position by sutures passed through the bulbar conjunctiva. The flap at first became swollen, infiltrated, and opaque, but eventually vascularized and became level with the cornea proper. At the date of writing the flap had so cleared up as to allow the angle of the anterior chamber and the iris to be made out through its substance.

PREVENTION OF INFECTION OF THE EYE BY THE PRE-OPERATIVE ADMINISTRATION OF POTASSIUM IODIDE.—Dor (*L'Ophthalm. provinciale*, December, 1906).—For the past five years Dor has given iodide of potassium in doses of 15 grains thrice daily for three days before operation, and within this time has operated on numerous complicated cases without the slightest accident. He relates the case of a double cataract in a man, aged 70, who had, in addition, purulent cystitis, prostatitis and perineal fistulæ. The right eye had been lost through operation. Dor gave his usual prophylactic, and operated with the patient in a garret lighted only by means of a bull's-eye lamp and in an atmosphere impregnated with the odor of decomposing urine. The result was good.

CITY FOR THE BLIND (*Cleveland Plaindealer*, January 6, 1907).—A new and beneficial scheme on behalf of those bereft of sight has been initiated by the Queen of Roumania, who has conceived the idea of founding a city especially for the blind. All the blind are to be removed from the precarious and often miserable existence which has been theirs, and grouped together in a colony where their hardships will no longer weigh upon them and where they will find interesting occupation befitting their condition. One of the remarkable features of the colony is a new method of printing, which can be performed by the blind. It was invented by the Queen's blind secretary, whom she especially engaged to help her in her work.

OTOLOGY AND LARYNGOLOGY.

IN CHARGE OF

WM. E. SAUER, M. D.

THE TREATMENT OF CHRONIC SUPPURATION OF THE MIDDLE EAR.—Dench (*N. Y. Med. Jour.*, May 4, 1907).—The conservative method of treatment of chronic middle ear suppuration, according to the author, is as follows. In the first place, thorough cleansing of the canal followed by syringing with a mild antiseptic solution, preferably, bichloride 1-10,000 to 1-6,000; in performing this irrigation it is best to use a small soft rubber bulb syringe and to use at least a half pint of the solution, sufficient to thoroughly cleanse the canal. The frequency of irrigation depends upon the amount of discharge; where it is profuse, every two hours during the day, and every four or six hours during the night. The treatment must often be varied to suit the case in question. If the discharge has only lasted five or six weeks and we find a small perforation, enlargement by free incision and subsequent irrigation will usually clear up the attack, but if we find granulation tissue present, and after removal and subsequent irrigation it reappears, then diseased bone is undoubtedly present and mild measures will be useless. Some patients complain of an intermittent discharge. Cases of this kind are most frequently seen in children, and we may employ the conservative method of treatment at the time of the discharge; then direct our measures of treatment to the upper respiratory tract, removing adenoids and enlarged tonsils if they exist. This plan of treatment will effect a cure in a few cases, but in the great majority of cases it will give only temporary relief and more radical treatment will be necessary. The author outlines several methods of operative procedure, but the thing in view in each method is to remove all diseased bone and granulation tissue and establish free drainage.

ON THE BENEFICIAL INFLUENCE OF THE INTERNAL ADMINISTRATION OF POTASSIUM IODIDE IN TUBERCULOSIS OF THE UPPER AIR PASSAGES.—Gruenberg (*Zeitschrift für Ohrenheilkunde*, April 1907).—For a number of years it has been the rule at the clinic of Prof. Korner in Rostock to prescribe potassium iodide in all cases of tuberculosis of the upper air passages. The beneficial effect of the administration of the iodide has been noted so frequently that the author believes it to be more than a mere coincidence. He reports in detail a number of cases of tuberculosis in which a decided beneficial influence was exerted by the iodide.

He concludes as follows: 1. A primary tuberculosis of the upper air passages is frequently (not always) beneficially influenced and cured by the internal administration of potassium iodide, with or without local treatment.

2. A tuberculosis of the upper air passages can heal spontaneously; therefore, the iodide cannot always with an absolute certainty, be held responsible for the result; but the fact that a decided improvement very frequently and very quickly follows the internal administration of the

iodide, after other measures have failed, there can no longer be any doubt as to its value in these cases.

3. These findings show that potassium iodide can no longer be regarded as a positive diagnostic agent in differentiating tuberculosis from, lues.

THE SAFEST METHOD OF USING PARAFFIN SUBCUTANEOUSLY.—Large (*Laryngoscope*, April, 1907).—The author describes Prof. Gersuny's latest method of paraffin injection as follows: The site to be injected is made aseptic by the use of soap, alcohol and bichloride solution. Two syringes are used, one large and one small, with a hypodermic needle made to fit both syringes. After boiling the syringes the small one is filled with Schleich's solution and the larger one with paraffin. He injects the Schleich's solution under the tissues, then aspirates and if the fluid withdrawn is clear, showing no blood vessel has been entered, the large syringe is attached to the needle, which is left in situ, and the paraffin (semi-solid) is injected slowly, great care being taken not to inject too much at a sitting. The Schleich's solution acts as an anesthetic, making the operation painless. The author has seen the paraffin used in various deformities, such as saddleback nose, atrophy of muscles of the face after frontal sinus operation, inguinal and femoral hernia, prolapse of the lower bowel, etc. Prof. Gersuny has not had a single bad symptom following these operations. To summarize: The rhinologist has a very valuable adjunct in paraffin, providing that it is not used in the hot liquid state; that not too much is injected at one sitting; that is injected according to Gersuny's method; that everything is thoroughly aseptic; that there be enough loose tissue to form the artificial tissue, and that in cases of atrophic rhinitis the disease has not progressed too far.

DISEASES OF THE NASO-PHARYNX IN INFANCY.—Morse (*Boston Med. Surg. J.*, April 18, 1907).—The author in a lengthy article emphasizes the importance of diseases of the naso-pharynx in infancy, and believes that they are often either entirely overlooked by the general practitioner, or at least insufficiently and improperly treated. He considers acute rhinitis a very serious thing during early infancy on account of the interference with respiration and nursing, and also because of the tendency to middle-ear complications. For treatment he advises an abundance of fresh air, food and stimulation. Diphtheritic rhinitis is much more common in infancy than is usually supposed. It is generally of a very mild type and usually not suspected until other children develop a pharyngeal diphtheria. Adenoids are perhaps more injurious in early infancy than in childhood, on account of the small post-nasal opening, and are often the cause of snuffles, frequent colds, cough, especially at night, and worst of all, otitis media. Removal of the adenoids causes a cessation of these symptoms almost immediately.

In acute pharyngitis, respiration and the taking of food are often seriously interfered with, and there is always a tendency for it to develop into a secondary bronchitis. Retropharyngeal abscess is frequently overlooked on account of insufficient examination. Unwillingness to take

food, difficult deglutition, difficult respiration, nasal cry and stridulous respiration are some of the principal symptoms. If suspected, the pharynx should be palpated.

Otitis media is not a disease of the naso-pharynx, but in infancy it is frequently secondary. It should be looked for in all cases of doubtful diagnosis, and the only way to examine properly is with a speculum and good light. The symptoms are not at all characteristic in early infancy. For treatment, the author recommends irrigation with warm water, heat externally, bromides internally, and paracentesis if necessary.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

M. F. ENGMAN, M. D.

COCCIDIOIDAL GRANULOMA.—Brown (*Jour. Amer. Med. Assn.*, March 2, 1907).—This article contains a review of the eighteen cases contained in literature, with reports of cases fifteen and sixteen. The author states that the lesions of coccidioidal granuloma are almost invariably progressive, with marked tendency to dissemination by lymph and blood-currents. Few instances are reported in which the lesions have healed. It is probable that the skin lesions are primary in some cases, particularly those where skin manifestations appear before other symptoms. The secondary lesions are undoubtedly due to emboli in the blood-current, and may occur anywhere. So far, no blood cultures have been made. Of all the cases, only one patient is positively known to be alive. He had local lesions on the foot, which was promptly amputated. There was no recurrence for two years. The majority of patients lived less than one year, and in all were internal lesions. The disease in California seems to be confined to the lower half of the San Joaquin valley, and has occurred chiefly among men working on railroad construction or irrigating ditches. No case has been found in women. The pericardium and heart alone have escaped involvement in the list of cases affected by the disease.

REMARKS ON SYPHILITIC ALOPECIA.—Klotz (*Jour. of Cutan. Dis.*, March, 1907).—The author summarizes his conception of syphilitic alopecia as follows:

1. Alopecia or loss of hair is not a common or regular symptom of the early stages of syphilis.
2. The slight loss of hair, which is constantly taking place in healthy individuals as the result of the physiological change of hair, continues its existence through and beyond the course of syphilis, and must be taken into consideration before attributing to syphilis a loss of hair, so slight as to pass unnoted or scarcely attract the patient's attention.
3. The same rule applies to numerous cases of slight seborrhoea of the scalp, which under ordinary conditions would not be considered worthy of notice or treatment.

4. In a certain number of cases, syphilis may be accompanied by a diffuse loss of hair, which may extend more or less over the entire scalp, varying in degree, similar to that observed after other infectious diseases, such as: typhoid fever, erysipelas, etc.

5. In the absence of any discoverable local changes in the skin, this alopecia is apparently the result of malnutrition of the hair, its appendages and the entire skin as part of a general modification of the entire organism by the infection with the virus.

6. This alopecia is, therefore, not strictly a symptom of syphilis, directly due to the virus, but rather a complication.

7. This alopecia is directly dependent upon and in most instances proportionate to the general symptoms, which may accompany the second period of incubation, and usually makes its appearance several weeks after the onset of the prodromal symptoms, similarly to other infectious diseases, like typhoid.

8. Although this alopecia may be very extensive and affect other portions of the body, it shows a tendency to more or less complete restitution of the hair, unless the patient is too advanced in years or is a subject of hereditary tendency to baldness.

9. An alopecia occasionally occurs in the form of ill-defined irregular, small, sometimes coalescent patches of baldness, distributed principally over the back and upper portions of the scalp, and giving it a mangy or moth-eaten appearance.

10. This alopecia is observed almost exclusively in syphilitics, and is so characteristic, that with extremely rare exceptions, it is diagnostic of syphilis of the affected individual, either acquired or hereditary.

11. This alopecia is a characteristic symptom of syphilis, and almost always occurs at a period more or less remote from the time of infection, usually not before the end of the first year and up to the end of the second year. It generally follows a very tedious course, although terminating in restoration of the hair.

12. In the absence of any discoverable anatomical changes of the skin, due to a local specific process, it is very difficult to explain the origin of this alopecia in patches.

MEDICAL LAW AND MEDICAL JURISPRUDENCE.

IN CHARGE OF

IRVIN V. BARTH, LL. B.

QUALIFICATIONS OF EXPERTS.—*Smith v. State, (Court of Criminal Appeals of Texas, 1907) 99 S. W. 100.*

Appellant had been convicted of murder in the first degree, and his punishment assessed at life imprisonment in the penitentiary. On the appeal he complained that the trial court had erred in excluding the testimony of a certain physician, an expert witness, regarding the fatal character of a wound inflicted. The Appellate Court sustained the ruling of the trial court and for further grounds held:

"Besides, we do not believe that this witness sufficiently qualified as an expert to give an opinion from personal observation or upon a hypothetical case stated. Not being a graduate of any school of medicine, not being shown to have read any books on surgery, or to have been at all familiar with gunshot wounds, his mere license to practice medicine, even predicated on the granting of this license by a medical board, we do not believe qualified him as an expert. *Rice v. State*, (Tex. Cr. App.) 94 S. W. 1024."

NOTE. The case of *Rice v. State*, cited in the above was the subject of our consideration in the March issue of this Journal, Volume XIV, Number 3. In the note to that case it was observed that "in every field of human activity where the testimony of an expert may be required he may be qualified as such either (1) by reason of a professional, scientific or technical training, or (2) by practical experience in the subject matter of his testimony, which gives to him an especial knowledge not shared in by men in general."

The principal case affords an apt illustration as to the application of these tests for qualifying experts. Here the physician did not claim a practical experience with reference to the subject matter of his testimony, nor was it shown that he had "read any books on surgery" or that he was a "graduate of any school of medicine," — he could qualify only as having been licensed by a medical board to practice his profession.

It is gratifying to note this somewhat advanced position taken by the Court, though it be only a dictum. While the Courts have been by no means uniform, they have generally held that if a person is shown to be a practicing physician, it is sufficient, in the absence of conflicting proof, to qualify him as a medical expert. "Physicians and surgeons," says an eminent author, "are presumed to be acquainted with all matters pertaining to their profession, and to be competent to testify concerning them; and their opinions are admissible in evidence upon questions that are particularly and legitimately embraced in their profession and practice. It is not necessary that the medical witness should be a specialist, or should have made a specialty of the particular disease involved in an inquiry to render his testimony admissible as that of an expert; and a person having the requisite qualifications is not debarred from giving an opinion, in the absence of a statutory prohibition, by the fact that he is not a practitioner, licensed or otherwise; and his reputation has nothing to do with his competency."

In Missouri, the case of *Seckinger v. Manufacturing Co.*, (1895) 129 Mo. 590, serves in a measure to illustrate the attitude of our Courts generally. There Burgess, J., said:

"This witness had been a practicing physician for twenty-five years. He stated that he was not a specialist for lung trouble, and, not being an expert in that line, he turned him (plaintiff) over to Doctor Foster. All the witness stated was that he was not an expert in the treatment of consumption. He was clearly as competent, from his long experience as a practitioner, to give his opinion as to the cause of the consumption in plaintiff, as he was to give his opinion as to the cause of any other disease in any of his patients, although he may not have had any experience in the

treatment of such disease. It would seem that no error was committed in permitting this evidence to go to the jury."

It must here be observed that the question of the competency of a physician to testify as an expert is one left to the sound discretion of the trial court — the weight to be given to the evidence of the expert, once judicially declared to be competent, rests entirely with the triers of the facts. And while this discretion, resting with the trial judge, as to the competency of the witness to testify is circumscribed by established principles of law, while, in short, it is not an arbitrary discretion, nevertheless it may act within a broad sphere and will not be declared by the appellate tribunal to have been unlawfully exercised unless its abuse was palpable. Thus it lies greatly within the power of the trial court to require the strictest tests of competency. It would hardly be declared an abuse of discretion for the court to insist upon a showing of special skill on the part of a physician where he seeks to qualify for the purpose of testifying concerning a subject matter itself highly technical and distinctive. With the progress and development of the arts and sciences the professions are so readily yielding to specialization, that an expert in one branch is often entirely unfamiliar with even the rudiments applicable to another branch of the same profession. Those courts which in the exercise of their judicial discretion would take cognizance of this fact must most assuredly be in accord with the logic of the law.

REVOCATION OF LICENSE TO PRACTICE.

STATUTE OF LIMITATIONS.—State Medical Examining Board et al. v. Stewart (*Supreme Court of Washington*, 1907) 89 Pac. 475.

Appellant's license to practice medicine and surgery had been revoked by the State Medical board on the ground of unprofessional and dishonorable conduct. By statute, it was provided that a conviction of any offense involving moral turpitude should constitute "unprofessional or dishonorable conduct." Appellant contended that the statute of limitations applicable to ordinary civil actions could be invoked in his defense here. The court in passing upon this matter, said:

"It is unnecessary for us to decide the technical question presented whether this is a civil action, within the meaning of the statute, because we are satisfied such statute does not apply to this case in any event. The object of the statute was to prevent immoral or dishonorable persons from procuring licenses to practice medicine in this State, and, if persons having licenses were found to be unprofessional or dishonorable, then their licenses might be revoked. The character of the person at the time the charge of unprofessional conduct is made controls his right to the license. The character is proved by his conduct in the past. A conviction of any offense involving moral turpitude is made conclusive evidence of unprofessional conduct. It is not contemplated by the statute that the examining board shall try the accused and find him guilty of an offense involving moral turpitude when there has already been a trial and conviction. Such former conviction by a court of competent jurisdiction is conclusive evidence of the moral character and professional conduct of the accused at the time the charge is made against him. The statute, therefore, constitutes a rule of evidence in such cases, to which the statute of limitations does not apply."

BOOK REVIEWS.

HANDBUCH DER ROENTGEN-LEHRE, ZUM GEBRAUCHE FUER MEDIZINER. Von Dr. Henmann Gocht. Stuttgart. Verlag von Ferdinand Enke. 10 marks.

The author first gives an accurate description of the various appliances used to produce the Roentgen Ray. This description is practical, and contains many valuable hints. The application of this light to the uses of medicine and surgery is then carefully described. Appended to the article is a most valuable bibliography of writings on the use of the Roentgen Rays.

THE IMMEDIATE CARE OF THE INJURED. By Albert S. S. Morrow, M. D., Attending Surgeon to the Workhouse Hospital and to the New York City Home for the Aged and Infirm. Octavo of 340 pages, with 238 illustrations. Philadelphia and London. W. B. Saunders Company, 1906. Cloth, \$2.50 net.

A good book for handy reference for the trained nurse, and more skilled laity, giving clearly many valuable first aid directions. In attempting to make it available for the non-medical the greater part of the book is given to a study of the anatomy and physiology, which is well done, but the chief value of the work lies in the numerous illustrations which explain the text. A section of the work is given to a brief description of the stretcher drill as used in the United States Army; another section on poisons and antidotes is quite complete.

THE EAR AND ITS DISEASES. A Text-Book for Students and Physicians. By Seth Scott Bishop, B. S., M. D., LL. D., Honorary President of the Faculty and Professor in the Post-Graduate School and Hospital of Chicago; Surgeon to the Post-Graduate Hospital and to the Illinois Hospital, etc. Illustrated with 27 Colored Lithographs and 200 Additional Illustrations. Royal Octavo, 440 Pages. Bound in Extra Cloth. Price, \$4.00, net. F. A. Davis Company, Publishers, 1914-16 Cherry Street Philadelphia, Pa.

A little more than 2 years ago the 3rd edition of Dr. Bishop's text book on the diseases of the Nose, Throat and Ear, was reviewed in these columns. This volume, devoted exclusively to the ear, has been considerably enlarged. The anatomy and physiology of the ear have been very clearly presented. The author lays stress only on those methods which have given him the best results. In short, this little volume is the most practical little work on otology, that has recently been published. The only criticism we have to offer, is the limited space devoted to the otitic intracranial complications. For the student and general practitioner it is indeed an admirable work.

A TREATISE ON THE MOTOR APPARATUS OF THE EYES. Embracing an Exposition of the Anomalies of the Ocular Adjustments and Their Treatment, with the Anatomy and Physiology of the Muscles and Their Accessories. By George T. Stevens, M. D., Ph. D. Illustrated with 184 Engravings, some in colors. 496 Pages. Royal Octavo. Bound in Extra Cloth, Beveled Edges, \$4.50 net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia.

Dr. Stevens' work is a systematic development of the subject of adjustments of the eyes. Commencing with the comparative anatomy of the motile apparatus as it is found in the lower animal classes, and passing to the anatomy of the muscular, vascular and nervous apparatus engaged in the movements of human eyes, he advances from the physiology of adjustments to the subject of perspective and to the

psychology of sight, and at length to the classes of anomalies as they arise from variations from normal types.

As is well known, Dr. Stevens is one of the pioneer workers in this subject and has contributed a great deal to the advancement of our knowledge.

The illustrations, many of which are in colors, serve well to elucidate the text. The book is well worthy of careful perusal.

RETINOSCOPY (OR SHADOW TEST) IN THE DETERMINATION OF REFRACTION AT ONE METER DISTANCE WITH THE PLANE MIRROR. By James Thorington, M. D. Fifth edition revised and enlarged. P. Blakiston's Son and Co., Publishers, 1012 Walnut Street, Philadelphia,.

Dr. Thorington's little work is so well and favorably known to ophthalmologists that extended notice of this (fifth) edition is unnecessary. Despite the addition of considerable new matter the book has been reduced from 89 to 67 pages, a result attained by the use of smaller type and narrower spacing. The DeZeng electric retinoscope is described and its use endorsed. There are several new illustrations.

LECONS DE THERAPEUTIQUE OCULAIRE. By Dr. A. Darier. 3rd edition, entirely rewritten. Price 12 francs. Published at the office of La Clinique Ophthalmologique, 9 Rue Buffault, Paris.

Five years have elapsed since the second edition of Dr. Darier's well-known "Lecons"—years significant of much that is new and valuable in ocular therapeutics. The high esteem in which the work is held not only in France but in English-speaking countries as well, is attested by the fact that the English translation, by Sydney Stephenson, was out of print shortly after its issue.

Serotherapy, tuberculine, the organic silver salts, subconjunctival injections of dionin, sodium iodide, tuberculine, etc., intravenous injections of soluble mercurial salts, sodium salicylate, collargol, sera, etc., and the application of radium in trachoma and superficial epitheliomata are among the subjects of recent discussion and interest included.

The fact that the book is really a compilation of lectures, explains the rather diffuse style in which it is written. And yet this very form adds much to its readableness. When Dr. Darier champions a remedy he does so in full armor; and let those who come out to oppose him be well prepared.

The work is indispensable to the ophthalmologist who desires to keep abreast of the times in all recent advances of ocular therapeutics.

MAKERS OF MODERN MEDICINE. By James J. Walsh, M. D., Ph. D., LL. D. Fordham University Press, 1907. New York.

The opening chapter of this book is an abstract of a lecture delivered by Dr. Walsh in the course on medical history at Fordham University Medical School, New York. The material for the article on "The Irish School of Medicine" was gathered for a lecture delivered before the historical club of Johns Hopkins University. The author does not claim that these are the only makers of modern medicine who deserve place, but his material reached the size of a volume covering the following: Morgagni, father of pathology; Auenbrugger, inventor of percussion; Jenner, discoverer of vaccination; Galvani, founder of animal electricity; Laennec, father of physical diagnosis; Muller, father of German medicine; Schwann, father of the cell doctrine; Claude Bernard, discoverer in physiology; Pasteur, father of preventive medicine; O'Dwyre, inventor of intubation. We agree with the author that "without history a man's soul is purblind, seeing only things which almost touch his eyes." The book is a most interesting volume.

ANATOMICAL NOMENCLATURE WITH SPECIAL REFERENCE TO THE BASLE ANATOMICAL NOMENCLATURE (B N A). By Lewellys F. Barker, M. D., Professor of Medicine, Johns Hopkins University; formerly Professor of Anatomy in Rush

Medical College, Chicago. With Vocabularies in Latin and English. Two Colored and Several other Illustrations. Cloth, \$1.00 net. P. Blakiston's Son & Co., Publishers, 1012 Walnut Street, Philadelphia.

This is the only work in English in which the Basle anatomical nomenclature referred to as (B N A), is explained and its purposes described and its vocabulary given. In consequence, it is an exceedingly valuable book to students of anatomy.

TEXT-BOOK OF PSYCHIATRY. A PSYCHOLOGICAL STUDY OF INSANITY FOR PRACTITIONERS AND STUDENTS. By Dr. E. Mendel, A. O. Professor in the University of Berlin. Authorized Translation. Edited and enlarged by William C. Krauss, M. D., Buffalo, N. Y., President Board of Managers Buffalo State Hospital for Insane; Medical Superintendent Providence Retreat for Insane; Neurologist to Buffalo General, Erie County, German, Emergency Hospitals, etc. 311 Pages. Crown octavo. Extra Cloth. \$2.00 net. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia, Pa.

This is a very adequate translation of Mendel's well-known lectures on psychiatry. Its special claim to notice is that it contains Mendel's classification, the usefulness of which an experience of thirty years' teaching has seemed to warrant. The book contains practically no clinical descriptions and no extended presentation of pathology or anatomy. For the latter two omissions we can be grateful. A large portion of the early pages is given up to definitions and to psychological descriptions. These are neither more nor less clear and serviceable than are found in the majority of text books on insanity. Their utility is questionable. They have a traditional right to occupy the forepart of a book on psychiatry which apparently no writer has had quite the courage to pass over. The descriptions of the various types of insanity are sufficiently clear to those who have an opportunity of seeing a large clinical material, to others they are of no special value. The omission of dementia precox is noteworthy especially in a book appearing at the present time. A larger importance is given to paranoia than its clinical significance at the present time would seem to justify. The chapter on dementia paralytica is easily the best in the book, as it should be, for Mendel was one of the first to give to this disease a definite clinical place of its own. It is difficult to form a just critical estimate of a book of this kind, for its utility is obviously limited to those who have an opportunity to hear Mendel demonstrate cases or those who use it as a guide in work of their own. As a text book, to stand alone and to teach students anything about the insane, it certainly can not be said to fulfill its purpose. Text books of this nature may be looked upon as the expression of a personal view of insanity by one who has given much that is of value to this department of medicine, and as such it has a certain distinct, though limited value. To one who has been a student of Mendel it will recall many an interesting clinical hour filled with the presence of a notable and kindly teacher. Perhaps for this reason alone the book should receive a hearty welcome and its translator be gratefully thanked.

THE PRACTICE OF OBSTETRICS. IN ORIGINAL CONTRIBUTIONS. By American Authors. Edited by Reuben Peterson, A. B., M. D. Professor of Obstetrics and Gynecology in the University of Michigan, Ann Arbor, Mich. Illustrated with 523 engravings and 30 Full-Page Plates. Lea Brothers & Co., Philadelphia and New York. 1907. Price \$6.

The companion volume to Bovee's Practice of Gynecology, which deals with obstetrics and is edited by Reuben Peterson, is in many respects an excellent text-book. Among the collaborators are C. S. Bacon, M. Crockett, W. A. N. Dorland, H. Ehrenfest, H. F. Lewis, W. P. Manton, J. F. Moran, B. R. Schrenk and A. S. Warthin. If anything is deserving special praise it is the wisdom of the editor in selecting an anatomist, Dr. G. C. Huber, to write the anatomical and embryological parts. This has been done with unusual clearness and thoroughness. The editor has also carefully avoided the repetitions so frequently found in

compilations by various authors. Special praise should be given the methodical way in which each chapter has been worked out. The illustrations have been carefully selected. If there are any errors, they are of omission rather than commission. We miss several points concerning the new-born child, such as adherent prepuce, tongue-tie and their treatment; also illustrations of the technique of Caesarian section, which certainly is more deserving of exact description than symphyseotomy. (F. J. TAUSSIG.)

A MANUAL OF PATHOLOGY. By Guthrie McConnell, M. D. W. B. Saunders & Co., Philadelphia and London, 1906.

This manual gives in about 500 pages, the main and salient points of general and special pathology. The diction is always short and concise, but differs from that of other manuals by its clearness and definiteness. The reviewer must, however, say that in some cases the author has been too short. For instance, in the matter of arterio-sclerosis where the latest results of investigation should have been mentioned for differential purposes. The reviewer knows how difficult it is to concentrate in a few lines a problem that would take many pages to consider it in its entirety. It depends upon the personal equation of the writer, to which features he attributes the greatest importance. So any manual will always be more or less subjective. That the author has tried to avoid this danger is very evident; that he did not succeed now and then is no blame. He was wise in using for his illustrations mostly those from other well known sources. Their reproduction is perfect, and forms a valuable and pleasing help to the text. The book will be welcome to students of pathology, and will offer great help to the demonstrator and teacher.

HANDBUCH DER GEBURTSHILFE. Herausgegeben von F. von Winckel, Professor der Geburtshilfe an der Universitaet in Muenchen. Verlag von J. F. Bergmann in Wiesbaden.

Another volume of 900 pages is before us, representing the first part of the third volume of this gigantic work. It is devoted to a most minute consideration of obstetric operations. A chapter on antisepsis and asepsis, etc., from the pen of Wyder, is followed by an excellent description of all the available methods for artificial interruption of pregnancy, written by Sarwey. Wyder considers episiotomy and mechanical dilatation of the cervix, Lindfors of Upsala, external and internal version, while the chapter on bimanual version is contributed by the editor von Winckel. The next three long chapters are devoted to perforation, cranioclasty, decapitation, embryotomy and symphysiotomy (by Kroenig), followed by shorter essays of Franque on the reposition of prolapsed fetal parts and the prolapsed cord. A chapter of 200 pages, written by Wyder, dwells on the extraction of the fetus in breech presentation and by means of the forceps. Of special interest is the following chapter on vaginal Caesarian section, contributed by the inventor of the operation, Dührssen. The articles on the Porro operation and on conservative abdominal Caesarian section are written by Schenk and Kleinhans respectively. Strassmann describes the artificial removal of the placenta and the volume finally is concluded with a description of the various methods of anesthesia practicable in obstetric work contributed by Wyder. This brief enumeration clearly shows the wealth of information embodied in this new volume.

OPERATIVE GYNECOLOGY. By Howard A. Kelly, A. B., M. D., LL. D., F. R. C. S. (Hon. Edin.), Professor of Gynecological Surgery in the Johns Hopkins University, etc., etc. With 11 plates and 703 original illustrations, for the most part by Max Broedel. Second edition, revised and enlarged. Two volumes. New York and London, D. Appleton and Co. 1906.

It is nine years since this work appeared in its first edition. The great advance of gynecology and surgery during the past decade has made a revision of the work inevitable. But this new edition differs from the first not alone in that

it embodies the most advanced teachings of gynecology, it also offers many improvements in its make-up. The general practitioner especially will be interested in the fact that new chapters have been added on such subjects as Local and Palliative Treatments, Displacements and Pessaries, Menstruation and its Anomalies. A new chapter on Bacteriology has been written for this work by W. W. Ford and one on the Use of the X-Ray in Diagnosis, by F. H. Baetjer. Dr. George Gellhorn, of St. Louis, has supplied a very interesting chapter on Diseases of the Hymen, Dr. H. W. Cook on Anesthesia.

Nothing new can be said in praise of this work. Kelly's Operative Gynecology has gained for itself a prominent place in the medical literature of the world. We can not doubt that this second edition will further help American gynecology to receive proper appreciation on the part of the gynecologists of Europe.

THE PRACTICE OF OBSTETRICS. DESIGNED FOR THE USE OF STUDENTS AND PRACTITIONERS OF MEDICINE. By J. Clifton Edgar. Professor of Obstetrics and Clinical Midwifery in the Cornell University Medical College, etc., etc. Third edition, revised. With 1279 illustrations, including five colored plates and 38 figures in colors. Philadelphia, P. Blakiston's Son & Co., 1906.

Nothing could attest more forcibly to the value of this book than the striking fact that within three years the appearance of a third edition was necessitated by the sale within this time of 11,000 copies of the work. In order to meet the criticism that the book is too large, the author has reduced its size in this new edition by 100 pages. This he achieved, in spite of the fact that much new material and 140 new illustrations were added, by rewriting, condensing a good part of the book and by omitting some now obsolete matter.

GENITO-URINARY DISEASES AND SYPHILIS. By Henry H. Morton, M. D., Clinical Professor of Genito-Urinary Diseases in the Long Island College Hospital; Genito-Urinary Surgeon to the Long Island and Kings County Hospitals, and the Polhemus Memorial Clinic. Illustrated with 158 half-tone and photo-engravings and 7 full-page colored plates. Second edition, revised and enlarged. Royal octavo, 500 pages. Bound in extra cloth. Price, \$4.00, net. F. A. Davis Company, publishers, 1914-16 Cherry Street, Philadelphia, Pa.

In this edition much material has been added to the subjects considered as they are understood at the present time. The addition comprises especially the development and perfection of the surgical operations for prostatic hypertrophy and the knowledge of the surgical diseases of the kidney in regard to both diagnosis and treatment.

Dr. Morton presents the diseases of the genito-urinary organs and syphilis in a manner that makes the book not only a very practical text-book, but of value as a reference work.

ESSENTIALS OF GENITO-URINARY AND VENEREAL DISEASES. S. S. Wilcox. Saunders' Question Compends. W. B. Saunders Company, 925 Walnut St., Philadelphia.

Being arranged on the question and answer plan, this book adequately serves its purpose, containing those subjects upon which specialists are agreed; and may be relied upon as eminently trustworthy, as well as condensed without being tiresome.

GENITO-URINARY DISEASES AND SYPHILIS. Hirsch. Blakiston's Quiz-Compends; P. Blakiston's Son and Company, 1012 Walnut street, Philadelphia.

This little book of 351 pages is well arranged and concise, yet complete. There is epitomized in it the great mass of matter that we find more fully considered in the

standard text-books. It is noteworthy that the very latest advances in this line of work are accurately described.

PHOTOSCOPY (SKIASCOPY OR RETENOSCOPY.) By Mark D. Stevenson, M. D., Ophthalmic Surgeon to the Akron City Hospital; Oculist to the Children's Home, Akron, Ohio. Octavo of 126 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1906. Cloth, \$1.25 net.

This little book of 126 pages is rather a personal account of the author's experiences with retinoscopy—or as he prefers to call it, "Photoscopy"—than a formal treatise on this indispensable method of estimating refraction. It is written in an easy conversational style and will doubtless prove attractive to beginners. The illustrations are adequate, in the main. Typographical errors are comparatively few, but we note on p. 91, line next to the bottom, that "in" is printed for "is."

BAKTERIOLOGISCHES TASCHENBUCH. Von Dr. Rudolph Abel. Wuerzburg, A. Stuber. 10 Auflage, 1906.

The value of this little book has been so often emphasized for its former editions, that it need not again be mentioned for the tenth. The changes, of course, are those that late work has made necessary, and are utilized in the new edition. Even *spirochaete pallida* has found its place; but it is here where the author has not been up to date in mentioning and detailing for staining in tissue the method of Bartarelli and Volpius, and not saying a word about Levaditis' procedure, that has made its way over the whole world in the past two years. This is a little flaw, that the next edition must correct.

TEXTBOOK ON THE PATHOGENIC BACTERIA. By Joseph McFarland, M. D. W. B. Saunders & Co., Philadelphia and London, 5th Edition, 1906.

McFarland's textbook has, in its fifth edition, reached a size about doubling that of the first issue. Many little alterations will be found, particularly in the review of the immunity theories and their practical application. The representation of this subject is much improved in clearness above that in the 4th edition; still it is yet influenced by the mistake of treating principal points on the same basis as details. The attempt to bring as many of the latter as possible obviates the purpose to impress the trend of the thought that has led to the theory, and thus to enable the reader to appreciate its meaning and justification. The changes and additions to the chapters on single pathogenic bacteria conform to the advance made during some years in our knowledge. In some cases, for instance, the *bacillus cholerae suis*, the representation is not up to date, as the work done at the Bureau of Animal Industry has not been referred to. Perhaps the 6th edition will do this.

A MANUAL OF NORMAL HISTOLOGY AND ORGANOGRAPHY. By Charles Hill, M. D. W. B. Saunders & Co., Philadelphia, and London, 1906.

The book was written in the interests of elementary students, and is intended to serve as a guide in class work for teacher and student. Accordingly it offers in short and concise way the elementary parts of histology and normal anatomy. The representation is lucid and objective, as it must be. The illustrations, especially of histologic material, are more or less schematic, and hardly serve the purpose of demonstrating details. One point must be mentioned as unique, the chapter on the histology and anatomy of mouth, teeth, tongue and pharynx, that is dealt with at considerable length. In other compends with similar object these subjects are usually altogether omitted or touched only with a few words. There is no reason why Hill's book should not make its way. It is, of course, not a book for study.

A TEXTBOOK OF PATHOLOGY. By Alfred Stengel, M. D., 5th Edition. W. B. Saunders & Co., 1906, Philadelphia and London.

The character of the 5th edition of Stengel's text book has remained the same. Comparatively few changes have been made, especially in some of the chapters on general pathology. The other changes concern some illustrations and some additions or corrections made necessary by the work in pathology during the past few years. What was said about the former editions, obtains for this. As no absolute necessity for a new edition can be seen, as far as the subject is concerned, the appearance of this new issue is evidence of its wide distribution, a matter of satisfaction to the author and the publishers.

THE NURSING; THE FEEDING AND HYGIENE OF PREMATURE AND FULL-TERM INFANTS. By Pierre Budin, Professor of Obstetrics, University of Paris; Director of the Clinique Tarnier; Member of the Academy of Medicine. Authorized Translation by William J. Maloney, M. B., Ch. B., Fellow of the Obstetrical Society of Edinburgh; Ettles Scholar, Houldsworth Research Scholar, etc. With an introduction by Sir Alexander R. Simpson, M. D., LL. D., D. Sc., Emeritus Professor of Midwifery and Diseases of Women and Children, University of Edinburgh. One hundred and eleven diagrams in color and other illustrations. pp. 199. Price \$6.00. London: The Caxton Publishing Company. New York: The Imperial Publishing Company, 1907.

To those who have followed Professor Budin's work in his fight against infant mortality in France, the news of the appearance of an English translation of his book, "The Nursling," will be most welcome. Budin's so-called "Consultations for Nurslings," which are, in reality, polyclinics, where systematic instruction is given to mothers in the art of feeding and properly caring for their children, have become enormously popular in France, and are being established in other countries as well. That they have saved many hundreds of lives cannot be questioned, and the debt that the French community owes to Budin cannot be easily measured. Now he has put the medical profession under many obligations by the publication of his lectures on the nursling. In the original, the book makes most delightful reading, and it is a pleasure to be able to say that in this case the translation has been worthy of the book. The first four lectures deal with the study of premature children with special consideration of their temperature and their chilling, their feeding and the diseases to which they are especially liable. The lectures are clear and explicit, and the conclusions reached are based upon an exhaustive study of enormous numbers of cases. In addition there is a discussion of the best arrangements of a ward for the care of weaklings in hospitals. The other six lectures are devoted to a consideration of the normal infant. Budin is a firm believer in the wisdom of insisting upon mothers nursing whenever this is at all possible, and lays special emphasis on the fact that by proper care of the mother's diet and general mode of life, much can be done to stimulate the flow of milk. He is especially emphatic in his assertion that having a little breast milk is of enormous value to the infant, and that every effort should be made to get it. With reference to substitute feeding, Budin's plan seems almost incredibly simple, especially to those of us accustomed to the elaborate percentage system of modification of the American School. Budin uses UNDILUTED STERILIZED milk; which he gives in quantities adapted to the child as determined by age and weight. The problem of the proteid is apparently not a problem at all. To those who insist that the feeding of infants is necessarily a process of complex algebraic formulæ, the exposition of Budin's views will come as a distinct shock under any circumstances. The work is a most suggestive one, and the English speaking profession is really under many obligations to Dr. Maloney for a most excellent translation. The statistical material has been collected into a series of appendices so as to make references easy. The book is well illustrated, with a series of graphic charts in color, which add considerably to the clearness of the case reports. The book work itself is most excellent, and as a whole, the work is one to be most heartily commended to those interested in the question of hygiene of infants.

TUTTLE ON DISEASES OF CHILDREN. A POCKET TEXT-BOOK OF DISEASES OF CHILDREN. By George M. Tuttle, M. D., Attending Physician to St. Luke's Hospital, the Martha Parsons Hospital for Children and Bethesda Foundling Asylum, St. Louis, Mo. New (2d) edition, thoroughly revised. In one 12mo. volume of 392 pages, with 5 plates. . Cloth, \$1.50 net; flexible leather, \$2.00 net. Lea's Series of Pocket Text-Books, edited by Bern. B. Galaudet, M. D. Lea Brothers & Co., Philadelphia and New York, 1907.

The fact that this book is now in its second edition affords an index of the reception it was accorded by the profession. It is a pleasure to find in a manual of this size as complete an epitome of modern pediatric thought as this one affords. It is noteworthy that condensation has not been pushed to the point where lack of clearness would result. Special attention has been paid to the question of physiology of the infant and its nutrition. The acute infections are thoroughly described. The make-up of the book is excellent and Dr. Tuttle deserves the thanks of the profession for this contribution to the literature.

INTERNATIONAL MEDICAL ANNUAL. A Year Book of Treatment and Practitioner's Index. 8vo., pages 624. Price \$3.00, by E. B. Treat & Company. E. B. Treat & Co., 24 W. 23d street, New York.

This attractive volume is the twenty-fifth edition of this series. Its contributors being among the recognized men of ability in their special field, places the review of each individual branch of medicine among the best reviews extant at the present time. The completeness and exhaustiveness of this year book combined with the paged index makes it one of the best and the most convenient ready references to the latest literature in almost any division of medicine or surgery. The detailed methods of treatment including newer drugs and recent development in surgical technique make this edition one which can be especially recommended to progressive students of medicine and general practitioners.

GYNÆKOLOGISCHE RUNDSCHAU. Zentralorgan fuer Geburtshilfe und Frauenkrankheiten. Herausgegeben von Dr. Oskar Frankl in Wien.

The number of German special journals on gynecology and obstetrics has been enriched by a new one. It differs from all the existing publications of this specialty in that it is devoted chiefly to articles dwelling on subjects of the borderlands. The first six numbers which, so far, have appeared, contain most valuable contributions on topics which demonstrate the close relation existing between gynecology and internal medicine, neurology, pediatrics and medico-legal medicine. This feature makes the new journal one of particular interest and importance to the general practitioner. It appears semi-monthly and costs 15 marks annually.

THE HEALTH—CARE OF THE BABY. A HANDBOOK FOR MOTHERS AND NURSES. By Louis Fischer, M. D. Author of "Infant Feeding in Health and Disease," etc. New York and London. Funk and Wagnalls Company, 1906. Pp. 144. Price 75 cents, net.

This little monograph contains a wealth of information of value to young mothers and nurses. The first part is devoted to the general hygiene of the infant. Part two contains a very good resume of the complex question of infant feeding described with clearness and intelligence, while part three is devoted to a description of every disease and emergency conditions. The book can safely be recommended.

CARR'S PEDIATRICS. The Practice of Pediatrics by Eminent Authorities. Edited by Walter Lester Carr, M. D., Consulting Physician to the French Hospital; Visiting Physician to the Infants' and Children's Hospital, New York.

In one very handsome octavo volume of 1014 pages, with 199 engravings and 32 full-page plates in colors and monochrome. Cloth, \$6.00, net; leather, \$7.00 net; half morocco, \$8.00, net. Lea Brothers & Co., Publishers, Philadelphia and New York, 1906.

At a time when text books on diseases of children are appearing with great frequency, one looks for signs of individuality in any new-comer. The present work differs from many text books, in that it really represents a series of monographs on the more important subjects of pediatrics.

The chapters on Infant Feeding, by Southworth, are most excellent, lacking little in completeness and showing a tendency to avoid extremes which cannot be too highly commended. The diseases of the alimentary tract are handled in a masterly manner by Boviard. It would be difficult to find a better summary or a clearer presentation than this. The infectious diseases are adequately discussed though their presentation is naturally, rather schematic. The chapters on diseases of the heart and blood vessels, by F. J. Poynton, of London, constitute a most important contribution to the literature. In none of the modern text books of Pediatrics is a better presentation of this subject to be found. Attention should also be directed to McCarthy's monograph on diseases of the nervous system. As a whole, the work comes as a welcome addition to our literature and the enthusiastic reception which it has already met is most fully justified.

The book work itself is sumptuous.

THE OPERATION ROOM AND THE PATIENT. By Russell S. Fowler, M. D. W. D. Saunders Co., Philadelphia and London, 1906.

Dr. Fowler did not live to accomplish what was evidently intended for a sequel to this volume. This eminent surgeon died after dedicating this valuable work to the internes and nurses, whom he had helped to train, and to those who were to still undergo training. He stated that this work was to be the forerunner of a much larger volume upon postoperative treatment.

The volume is not only interesting in the departed author's well-known style, but is valuable as well. The first illustration in it depicts the model operating room and its accessory chambers. It could be studied with profit by all who contemplate new hospital buildings and equipment. Not only is the operating room its chief subject, but the instruments and the various supplies which go to make up the full equipment of the operator. It seems that nothing has been forgotten, which is intended for use on the patient, at or after the operative procedure. The illustrations are very numerous and depict most fully the various positions which are useful in surgical examinations, operations, and after-treatment. The work is different from any other that has preceded it and will find a place in the library of every surgeon.

THE TECHNIC OF OPERATIONS UPON THE INTESTINES AND STOMACH. By Alfred H. Gould, M. D., of Boston, Mass. Philadelphia and London: W. B. Saunders Company.

This work, while not quite so large as two similar books which appeared a few years ago in the French language, is in every other respect a superior to them. It has the great value of not being simply a re-hash of every method, good and bad, which has ever appeared for doing surgical work upon the stomach and intestines. In other words, only the best and most useful procedures have been incorporated in it, and there are, in addition, several of the author's new devices and means of doing things. The illustrations are admirable, for the most part, some of them being executed in colors, while none of them, as in the case with the two French works above referred to, can be called distinctly bad. The chapter on intestinal repair, illustrated with many micro-photographs, is worth alone the price of the volume. The author has been experimenting for three years along this line, hence much of that offered, and especially is this true of the illustrations, which can be said to be absolutely new and original. Where this is not true, full credit is given the author whose work has been used. The

author is a Bostonian, which explains the fact that the complexion of the book is largely influenced by his surroundings; almost all of the prominent Boston surgeons are given credit for suggestions proffered or favors shown Dr. Gould in building up his book. Such masters of gastric intestinal surgery as W. J. Mayo, J. M. T. Finney and Gregory Connell are also given credit for valuable suggestions.

A COMPEND ON BACTERIOLOGY, INCLUDING ANIMAL PARASITES. By Robert L. Pitfield, M. D., Pathologist to the Germantown Hospital and the Hospital for Lung Diseases, Chestnut Hill. Pathologist to the Widener Memorial School. Late Demonstrator of Bacteriology at the Medico-Chirurgical College, Philadelphia. Four plates and 80 other illustrations. Octavo Volume. 222 pages. P. Blakiston's Son & Company, 1012 Walnut st., Philadelphia, \$1.00 net.

As an up-to-date compend on this rapidly developing subject this book is one of the most advanced at the present time. Besides the detailed consideration given on the purely bacteriological division of this subject it also includes the literature of the time on the serum reaction, blood cultures, opsonins, etc., which are being so rapidly introduced into the practical field of Clinical Medicine. The late methods of technique and the newer apparatus in this line, besides the numerous cuts, are points which make this volume important and valuable as a ready reference for this sort of information.

THORNTON'S POCKET MEDICAL FORMULARY. New (8th) edition, revised to accord with the new U. S. Pharmacopeia. Containing about 2,000 prescriptions with indications for their use. In one leather bound volume. Price \$1.50 net. Lea Brothers & Co., Publishers, Philadelphia and New York, 1907.

This little formulary is a revision of previous editions of its kind based upon the changes made in the U. S. Pharmacopeia. It follows the same plan as previous editions giving classified number of the standard prescriptions and their special indications for each of the separate diseases which are arranged in alphabetical order.

CHEMISTRY. General, Medical and Pharmaceutical, including the Chemistry of the U. S. Pharmacopœia. A manual of the Science of Chemistry and its Applications to Medicine and Pharmacy. By John Attfield. New (19th) edition, specially revised by the Author to accord with the New U. S. Pharmacopeia, edited by Leonard Dobbin. 12 mo., 760 pages, illustrated. Lea Brothers & Co., Philadelphia and New York, 1906.

It is necessary that the physician should understand, not only the general principles of the science of chemistry, but their applications in medicine and pharmacy as well. This manual is intended as a systematic exponent of the science of chemistry, in its application to the principles engaged in medicine and pharmacy. It is equally useful as a reading book for those having no opportunities of attending lectures, as well as a text book for college students. The index is very comprehensive, containing nearly 10,000 references. Substances that are of only scientific interest are not included, but the chemistry of every substance recognized officially is carefully considered. The volume is concise, yet complete and is a valuable addition to the library of one who desires a profound knowledge of the remedies that he applies in his daily routine.

DIE ARZNEIMITTEL DER HEUTIGEN MEDIZIN MIT THERAPEUTISCHEN NOTIZEN FÜR PRAKTISCHE AERZTE UND STUDIERENDE DER MEDIZIN. Von Dr. Otto Dornbluth. Zehnte Auflage. A. Stuber's Verlag (C. Kabitzch) Würzburg 1906.

This little volume contains in a very concise form, a complete list of the more important drugs and synthetic products used in the present day. So many of

these new remedies are appearing upon the market, of such complex chemical make-up, that it is difficult, indeed, for the busy physician to keep them all in mind. This volume contains not only a list of these remedies, but also a description of the chemical make-up, dosage, price, etc.

A LABORATORY MANUAL OF PHYSIOLOGICAL CHEMISTRY. By Elbert W. Rockwood, M. D., Ph. D., Second edition, revised and enlarged. With one Colored Plate and Three plates of Microscopic Preparations. Large 12 mo. 229 pages, extra cloth. F. A. Davis Co., 1914 Cherry St., Philadelphia, Pa.

This book is intended for laboratory instruction as opposed to didactic instruction. It has been prepared with the aim of imparting accurate knowledge through the student's own observation.

ORTHOPAEDISCHE TECHNIK. Anleitung zur Herstellung Orthopaedischer Verband-Apparate. Von Dr. Hermann Gocht. Stuttgart Verlag von Ferdinand Enke. 6 marks.

This volume is published in order that the methods used in the construction of orthopedic appliances, such as braces, jackets, arch-supports, etc., may be better understood. It is illustrated with 162 plates, and the exact method, from a mechanical standpoint, of making steel braces, leather braces, celluloid jackets, is accurately described.

INTERSTATE MEDICAL JOURNAL

PUBLISHED ON THE FIRST DAY OF EVERY MONTH BY THE
INTERSTATE MEDICAL JOURNAL COMPANY

SUBSCRIPTION, \$2.00.

FOREIGN SUBSCRIPTION, \$2.50.

SINGLE COPY, 25c

Subscriptions may begin at any time. Volumes end with issues of December.

Original Articles.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. French and German articles will be received and translated free of charge, if found desirable for publication.

Reprints (290) of original articles will be furnished gratis to authors making the request, which must accompany the manuscript. Covers to these, and extra reprints, will be furnished at net cost.

Illustrations, such as plates, half-tones and zinc etchings, as in the judgment of the editors are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

Rejected Manuscripts will be returned, if stamps be sent for this purpose.

Advertisements.—Advertising forms go to press on the 5th of the month, the JOURNAL being mailed on the 15th. Time should be allowed for composition of advertisements and

for the sending and return of proofs. Advertising rates will be sent on application.

Change of Address.—In ordering a change of address, it is important that both the old and new addresses be given.

Discontinuances.—The INTERSTATE MEDICAL JOURNAL is not discontinued at expiration of subscription, but is sent until an explicit order to stop is received or a notice sent by us. A large majority of our subscribers prefer not to have subscriptions interrupted and files broken in case they fail to remit before expiration. It is therefore assumed, unless notice to discontinue is received and the amount of back subscription paid to date, that the subscriber wishes no interruption in his series. Journals returned are not notice of discontinuance.

Remittances should be made by check, draft, registered letter, money or express order. Address all communications to INTERSTATE MEDICAL JOURNAL, Linmar Building, St. Louis, Mo

INTERSTATE MEDICAL JOURNAL.

VOL. XIV.

JULY, 1907.

No. 7

EDITORIAL.

CONSOLIDATION OF THE ST. LOUIS COURIER OF MEDICINE WITH THE INTERSTATE MEDICAL JOURNAL.

Centralization of effort is the tendency of the times and in no field of journalism has this been more needed than in the publication of periodical medical literature. It is with much satisfaction, therefore, that the Publishers announce the purchase of the *St. Louis Courier of Medicine* and its consolidation with the INTERSTATE with the current number.

The *St. Louis Courier of Medicine* is one of the oldest Western medical journals, having been established in 1879. It was the leading medical journal of St. Louis and the West when many of the prominent physicians of to-day were young practitioners. Many notable advances in medicine and surgery were first recorded in its columns and the thirty-six volumes of the *Courier* give a very complete history of the development of modern medical science in St. Louis and the territory of which this city has been and is now the medical center.

Most of the subscribers to the *Courier* have already authorized the transfer of their subscriptions to the INTERSTATE MEDICAL JOURNAL, and the others are invited to do so at an early date.

GUI PATIN'S LETTERS.

The literary characteristic of the age is to publish the letters of distinguished individuals. The insatiable appetite of the public seems never to be appeased in this respect, despite the fact that hundreds of books containing reminiscences and letters have been printed in the last few years. And there is good reason for this. In the first place, letters when written in an unstilted, natural way give a rare insight into the workings of minds interesting to study, and, secondly, the true personality of the man is laid bare, not by a biased or a too lenient critic, but by the man himself—hence the portrait, with all its faults, is superior to any the most sympathetic friend could give. This is evident in Huxley's letters, the charm of which is still with us; in Carlyle's correspondence, with its appeal for a kinder judgment than his many books led us to

grant him, and in Darwin's letters, the human document that has done so much to crush the existing prejudices against the dry-as-dust scientists. For similar reasons the new definitive edition of Gui Patin's letters, which has been edited by Dr. Paul Triaire of Tours and was published at Paris by Honore Champion about June 10th, can be added to the above list of epistolary books. For Gui Patin, in his letters, not only gave a much better portrait of himself than did Antoine Masson in the painting executed in 1670 and presented to the Paris Faculty of Medicine by Patin's grandson, Guy Erasme Emmerez, but he pictured the times in which he lived with a fidelity, a truth, an aggressiveness highly interesting to read about to-day.

Those who have read the letters in older editions* will recall Patin's historic quarrel with Theophraste Renaudot, protege of Cardinal Richelieu, founder of the first newspaper ever published, originator of the State pawnshop in France, enemy of the Paris Medical Faculty, advocate of the modern spirit, mountebank, quack, and crime of all crimes, chemist and dealer in antimony! A rather ragged versatility, this, but here and there made bright by originality and daring. Gui Patin, on the other hand, was respectability itself, and anything that touched the honor of the Paris School of Medicine excited him into violence. He was Dean of the Faculty and friend of the people; he detested Richelieu's power and characterized all chemists as "arabic cooks;" he had horripilation when the "antimonial enthusiasts" were mentioned in his presence, and he did not hesitate to block Renaudot's way whenever he could, abetted and encouraged as he knew he would be by the loyal support of the whole Faculty. Moreover, he thought ill of all physicians who did not prefer the teachings of Galen, Hippocrates and Aristotle to those of Harvey and Pequet. All this was bad enough and invited criticism from opponents outside the School of Medicine, but what made him appear especially ridiculous in the eyes of Renaudot and his adherents, was his slavish love for bleeding, for senna and for bran-broth.

It can readily be imagined that not many days elapsed before the honored Dean and the hated mountebank locked horns. An epigram in the *Gazette*, in regard to his bleeding and senna weaknesses, and attributed to Renaudot, started a veritable war. Gui Patin's anger was aroused and ink-pots were exhausted. As a specimen of the controversy, the following gentle words of Patin should move us to an appreciation of his aggressiveness: "Renaudot is nothing but a flat-nosed newsmonger, a shameless trafficker, an infamous usurer, an odious charlatan." Could anger exceed these bounds? Could respectability be less mindful of its usual habiliments? Yet, Menage, in speaking of this prince of invective.

* Lettres de Gui Patin, précédées d'une Notice biographique par le docteur Réveillé-Parise, 3 Vol. 1846.

says: "Gui Patin was the merriest doctor of his time," but then Gilles Menage was the product of the seventeenth century when raillery, such as we understand it to-day, was an unknown quantity in ordinary conversation or in the writings of well-known authors, and was really first introduced into French literature by Moliere, the inimitable creator of "le Medecin malgre lui" and "le Malade imaginaire."

Even were we to overlook the vituperation of so high-tempered and honorable a member of the Faculty in his dealings with one whom he visited with contempt and scorn on account of unpardonable irregularities, the same benign spirit cannot be assumed toward his stubbornness to admit the inestimable value of the brilliant beginnings of the age of Louis XIV., an age which he characterized by exclaiming: "At last we have reached the dregs of all the centuries."† This is another matter and passes human understanding. Surely a man who could indite letters of so rare a literary quality must have been aware of the scintillating currents around him. But, *que voulez-vous*, Gui Patin's mind was too thoroughly steeped in the lore of Grotius and Saumaise to apprehend the portents of any new movement. Nothing so well illustrates this attitude as his last letter (January, 1672), which runs as follows: "I have just learned from young Vanderlinden that Gronovius has died at Leyden. He was the last of the great savants of Holland. Alas! where are the successors of Joseph Scaliger, Baudius, Heinsius, Salmasius and Grotius. I also ascertain, from letters received from Brussels, that Plempius, the celebrated professor of medicine, is dead. Farewell to the sound teachings for which the Low Countries were famous. Descartes and the ignorant chemists, ruin everything they touch, be it philosophy or chemistry."

Fortunately for modern readers, the notorious Patin-Renaudot controversy plays only a minor part in the letters, the bulk of the work being devoted to gossip, some of it spiteful, some of it innocent, but all of a flavor to enthrall the student of history. Gui Patin's erudition, his candor, his wit and even his coarseness lend themselves excellently to the sort of epistolary art of which he was the master, and not a tittle less would we have in his descriptions of the Court, of the Medical Faculty; in his anecdotes about celebrities, or his criticisms of books.

THE DEMENTIA PRAECOX QUESTION.

An interesting study might be made of the origin and development of ideas that have been wrongly understood or falsely interpreted. The curious tendency of the human mind to hold fast to error and to persist in misunderstanding probably lies at the bottom of any explanation that

† *Causeries Du Lundi*, C. A. Sainte-Beuve. Tome Huitième.

might be advanced. It will be readily admitted that an error in understanding is more deeply grounded than a truth and for the reason that a wrong interpretation is often the path of the least psychological resistance. It is always more difficult to remove a wrong impression than to create a new or correct one. For some reason not easily understood the average human intellect holds fast with a marvelous tenacity to wrong conceptions of the spoken or written word. There almost seems to be a kind of imitative instinct in the direction of what is not true. Consequently there is always taking place conflicts of opinion that do not concern themselves with facts as originally stated but solely with the prevalent interpretation of facts. Now the strange part of this is not that such disputes take place nor that they are continually arising but that the contestants do not follow the only reasonable method of arriving at the truth; that is to consult the original source of the occasion of their difference of opinion. This sort of thing may be admirably illustrated by a short account of a contention that has been agitating the neurological world for some years. Perhaps if the development of this episode be briefly followed some light may be thrown upon similar disputes of a relatively greater importance.

Some years ago Kraepelin, perhaps the most notable of the German psychiatrists, published, in his text books and elsewhere, a description of a mental disease that had previously included several different types. He gave a name to this new class of cases and added an admirable clinical description of the different varieties which this malady might take. The name he gave was dementia praecox. The prognosis and the development of the disease in each of its forms was described with great care and the limits of a rigid classification were clearly admitted. In a year or so dementia praecox invaded England and America, being conveyed by the usual channels, i. e., abstracts, original reading in the German and by word of mouth by some one who had heard Kraepelin lecture. If the early literature be followed it is easy to see that almost from the beginning a strange misunderstanding about this disease was very prevalent. This took place as a result of a careless abstract or two, or of a misunderstood phrase from the German. The phrase so wrongly put uttered by an authority soon became the accepted truth and what happened was that the discussions were not upon what Kraepelin said but what so and so said he said. Very soon teachers, talkers and writers began to refer in a somewhat frightened spirit to the radicalism of Kraepelin, saying that his ideas were too revolutionary and that psychiatry was not yet ripe for so sudden a departure from the classical way of clinical division. One of our most learned societies held a sort of a symposium on Kraepelin and his dementia praecox and among them they managed to spread broadcast a good deal of ignorance on the sub-

ject. It is to be noted that at this meeting the original paper of Kraepelin was not referred to and the original description, as put down in his text book, was never mentioned. A French society of neurology and psychiatry discussed the question for two whole days and the gist of all this work was that the disease in question was neither a dementia nor precocious. One of these savants, in a burst of enthusiasm, published a record of seventy-five per cent cures. The result of this agitation in France was the publication of a paper called "Dementia Praecox in France." An enterprising superintendent of a western state asylum published a statistical paper in which his admissions for the past year in the class of dementia praecox was put at eighty per cent. Opposed to the sudden enthusiasm with which this disease was accepted in some quarters was a growing skepticism which denied absolutely that such a disease existed, and if it did, it was wrong anyway, because it made a confusion of the usual asylum statistics. On the whole the fashion seemed to be towards the point of view of mild skepticism, at the same time acknowledging in the main the services which were rendered by Kraepelin to psychiatry. It is now well on towards six years since the original excitement began in this country and now there is no corner of this land where a neurologist or psychiatrist is active that Kraepelin's dementia praecox is not a familiar subject, that is, from its controversial aspect. An Englishman, writing about it, brought out the fact if the original articles of Kraepelin's had been consulted a bit there would have been very little occasion for all the discussion that had taken place. The word dementia does not necessarily, in German, signify Blodsinn, which is the English equivalent of dementia in its incurable sense. In other words, Kraepelin did not mean and he never wrote that the disease was incurable. If we consult his original description we will find it as follows: "Dementia praecox is the name provisionally applied to a large group of cases which are characterized in common by a pronounced tendency to mental deterioration of varying grades. Dementia fortunately does not occur in all cases, but it is so prominent a feature that the name dementia praecox is best retained until the symptom group is better understood." If, during all these years, the men who wrote so voluminously had taken the pains to read in the original the exact words of Kraepelin the great dementia praecox question, in its present form at any rate, would not have existed. This is small comfort, however, for such is the tendency in medical thought that some other so-called question would have been given equal prominence. There is one obvious remedy always at hand,—read what an author has said, if possible in the original, and likewise attempt to obtain the spirit in which he wrote. The more important a new thought or discovery is, the more modest and the greater hesitancy is used in stating it. Kraepelin's serv-

ice is well put by Macpherson: "The truth is that Kraepelin himself would be the last man to assert that his conception was more than tentative, except of course, as regards diagnosis and prognosis. He has handed on the torch and even trimmed it."

MISAPPLIED CHARITY.

Charity, in the eyes of the masses, invariably carries a halo of goodness and self-abnegation. No matter how it is applied, the inherent magic of the term makes for much in their estimation and almost immediately, one might say, the donor of a tidy sum, or the originator of a scheme to alleviate distress among the people, is hurriedly placed upon a pedestal as an object lesson to those who are guilty of too much tugging at their purse-strings. This indiscriminate worship of an act which can be worthy and noble and beautiful, but unfortunately is just as often unworthy and ignoble in so far as the worthy poor are not its true beneficiaries, is a subject that should be properly judged from the vantage ground of truth.

We do not say that St. Louis is more guilty than other cities in the matter of misapplied charity, but we do affirm that there is enough of that sort here to engage the attention of critics for many a day. Take, for instance, the Saturday and Sunday Hospital Association. Yearly some \$40,000 are collected and then distributed among various hospitals, the idea being that by this gratuitous act a grand lesson in charity will be inculcated. No doubt the promoters of this charity had the best intentions and thought that by appealing to the citizens at large, another want would be met fairly and squarely; but the fruits of the lesson are as yet so small and insignificant, though the distribution of the money has continued through a number of years, that if any one can make them out as prominent among the videnda at our hospitals, he ought at once to communicate his knowledge to the public. And, until this knowledge is made evident, we shall go on thinking that despite the assistance rendered by the Fund, our hospitals are not increasing the amount of their charity work to any alarming extent; that in reality they are doing less and less, and that the Saturday and Sunday Hospital Fund is nothing but a misapplied charity which has unwittingly been the means of annihilating even that slight vestige of charity so characteristic of the better grade of hospitals in former years. For truth to say when a hospital can "charge up" to a certain Fund the expense incurred by taking in the worthy poor, it is being unnecessarily coaxed and warmed and cuddled by a too credulous public.

It is not the purpose of this article to vilipend certain hospitals for benefiting by the Fund; the money is offered them unsolicited and why

shouldn't they accept it? But what we wish to convey is this, that the distribution of the money is a misapplied charity in so far as it destroys the finer sensibilities of institutions heretofore looked upon as peculiarly sentient to charitable demands. Granting this to be the case, why continue to destroy the uncommercial intent of hospitals, their unique and only lesson to the community, when other charities, on account of monetary reasons, are still in embryo: charities whose high appeal should be answered at once by a hearty support. What thought has been given to a Maternity Hospital, to our many clinics and to the care of the blind? A slight agitation in favor of a Maternity Hospital has been started, but what avails enthusiasm when the wherewithal is lacking. As to clinics, has not Dr. Richard C. Cabot quite recently ridiculed our advice to poor patients by quoting the very apposite conversation of Alice and the Hatter in "Alice in Wonderland?" Quite easy indeed, as Dr. Cabot remarks, to say to an out-door clinic patient, get medicine, get proper food, go to the country. But how can this be done without money? Really, when we recall the many inane remarks we make almost daily to the poor, we are tempted to supplicate the Recording Angel to drop a tear upon them and blot them out forever, as Lawrence Sterne did in a famous passage in his novel "Tristram Shandy." And finally, who as yet in this city, with its pest of unnecessary and multifarious charities, has bethought him to imitate the great and noble work instituted by the Queen of Roumania (Carmen Sylva) to add to the comfort, the happiness and welfare of the blind?

Truth to say, we have many charities that might be spared to make room for those above mentioned, and others that would follow in their wake. The good sense of the age ought to dictate in these matters; and state and individual ought to abide by its decision. If this were so, our charities would be fewer and would partake of greater dignity; they would be on a higher level and serve a better if not the best purpose, and finally, they would not be so closely allied with the British Washerwoman's Orphans' Home and Mrs. Jellyby's enterprises, felicitously described by Thackeray and Dickens.

NEBUCHADNEZZAR EXERCISES.

In an age that has time and patience to tolerate innumerable vapid theories on such profound subjects as the treatment of obesity, the proper exercise of the muscles and even the prolongation of life, it is meet that we should give some thought to each and every new vagary. Although the onslaught has often left us in a state bordering on mental collapse, the fear lest our enemies might suppose our little brains had been swamped, has goaded us on to fresh endeavor. Hence our in-

terest in the latest theory (we say this timorously because another may have sprung up, mushroom-like, whilst writing), one which strikes us as the quintessence of scientific thought as interpreted to-day, for it is natural, easy and appeals to both man and beast. Modern thought is urban-tired; it needs the fields and fresh air—and what more natural than in its evolution it should produce the Nebuchadnezzar Exercise.

Whether or no this theory sprang Minerva-like from Dr. Forrest's brain is unknown to us, but this much we can affirm that it is the pivot upon which the doctor's learned work, "The New Method," revolves. One quotation ought to suffice to place the book in its true light before the gentle reader's eyes: "This is the final exercise, and a most important one. It is our favorite. It might be called the 'Nebuchadnezzar Exercise,' for although, in this, one does not 'eat grass like an ox,' he takes the ox position. It is recorded that Nebuchadnezzar was a better man morally after he had been turned out to pasture for a time, and we are sure he was a better man physically, for there is no exercise that uses so many muscles and so stimulates the lungs, liver, and heart as does the 'all fours' exercise. It is not a dignified exercise, and yet it is simply coming back to first principles. Man crept before he walked. Going once around the room would be sufficient for a weakly person, and for quite a strong one ten circuits of the room would be sufficient. It is simply walking on hands and feet—nothing more." Can enthusiasts of former methods—such as walking through slushy grass, taking phytolacca and the "mixed treatment" of Kissengen and Vichy—ask for anything that is more in consonance with the spirit of the times, the Zeitgeist, which refuses to be weighted down by things heavier than breakfast foods and the juice of root-vegetables

Lest the fervor of the converts to this new method should partake of the St. Theresa exaltation, it would be well to dampen it by telling them exactly what happened to Nebuchadnezzar when he "exercised." "The same hour was the thing fulfilled upon Nebuchadnezzar; and he was driven from men, and did eat grass as oxen, and his body was wet with the dew of heaven, till his hairs were grown like eagles' feathers, and his nails like birds' claws."

The author solemnly says "though one does not eat grass like an ox, one takes the ox position," but even the most careful perusal of his book elicits no mention of the insignificant item of feathers and claws. Of course, we are not in a position to assert positively that these undesirable growths would occur to-day, not having studied the results in any given case. Nevertheless, even though the feathers and claws may have been part punishment for crimes committed by Nebuchadnezzar, especially the one involving the burning of Shadrach, Meshach and Abed-nego, the modern disciples of the Babylonian king should be careful lest some of their venial sins are not punished in a similar manner.

MODERN AIDS TO THE TORTURE OF THE SICK.

Under the above title, we have discovered in our local daily press a most interesting article, written by "the sick man." It contains enough of truth to warrant reprinting in our pages. We feel that the poor sick man who wrote this article was indeed unfortunate during his illness, but we cannot excuse him for reasoning from one experience, and judging a class by one of its representatives, a representative who seems to us a very poor sort. But let us quote the sick man:

"Some day when you have floated up to consciousness that is not too definitely defined, you become aware of the nurse's presence. She is a thing of cap and gown, featureless—or at least having no individuality of features. She lifts your head from the pillow, and saying: 'Swallow!' thrusts medicine into your mouth. 'Go to sleep!' she says in a tone of authority."

"You ask for a drink of water, to know who she is, and whence she came, and how long you have been sick, and what seems to be the matter, and for members of your family. You are told to be silent and to go to sleep. You remember neglected things, that pertain to your business, and want to get up to telephone the office, but nay, nay, little one; the nurse orders you to go to sleep, and refuses to answer questions. She devotes no time or art or skill or tact, to soothing you when feverishly exalted nerves keep you awake. She tells you to go to sleep, and saying 'bosh,' occasionally refuses to allow even the soothingest person to enter your room. She creaks in a rocker just out of your sight, embroidering fantastic roses."

"Sick as you are, the short-weight mentality of the nurse becomes apparent. She has no tact; no examinations in tact are required in the hospitals where trained nurses are graduated twice a year by hundreds. Later you become aware that psychology is not in the nurses' course. Your nurse keeps a record for the doctor, which is supposed to be a hard and fast, accurate history of your changing condition. Should accident aid you to possession of this record, you will find that you are credited with eight hours' sleep, when you know it was the nurse who slept, while you lay tossing. But only accident can aid you to perusal of this record, which she keeps jealously guarded afar from you. I have heard there are good nurses, tender, attentive, intelligent,—psychologically intelligent—but this is my impression of one."

To us it seems that though this article is somewhat whimsically written, and indeed shows a highly wrought temperament between its lines, it nevertheless assumes the character of a lay sermon. We somehow wish that the young lady who embroidered the fantastic roses might read it, and that its moral might strike home; for she would then see that in assuming certain airs, and neglecting to strive towards the

attainment of the relationship that should exist between patient and nurse, she not only harms herself, but she brings down much prejudice on the innocent heads of her deserving sisters.

The sick man is right, in that psychology should be taught in nurses' training schools. It should be taught, however, to the superintendents and principals of these institutions, in order that they may pick out such women to become nurses as will regard their work in the light of a mission to suffering humanity. Nurses should strive, not through definite knowledge attained, in the treatment of the sick man as a thing in bed, to compass their work; but rather should they rely upon their true women's hearts and natural feminine tact, to gain the status with their patients that our friend, the sick man, above quoted, so urgently and pleadingly calls for.

LITERARY NOTES.

At the Congress of Scientific Societies recently held at Montpellier, M. Calmette described the oldest professorial theses which are kept in the Archives of the Faculty of Medicine of Montpellier, and which were overlooked by Germain in his book, "Ancient Theses of the School of Medicine." (1886.)

These unearthed theses were written for a competition instituted in 1574, a fact which proves that competition in medicine is older than is generally believed. The competitors were: Francois Sanchez, later on the celebrated philosopher; Jean Saporta, Jean Blezin, called Schywn, and Pagesi. The theses give evidence of the principal medical questions with which the School of Medicine was occupied at that time. Moreover, there are annotations, and even the dialogue between the examiner and the candidates appears.

Some time ago, Dr. Jean Charcot offered his father's library to Salpetriere. These books, from a neurological standpoint, are probably the most valuable collection in the world. Recently, the furniture and wainscoting of the room in which Charcot worked, were added to the gift, and ere long, the original work-room of the famous neurologist, showing his books, documents and discoveries, will be reproduced in one of the halls of the hospital.

President Arthur T. Hadley, of Yale, is the author of "Standards of Public Morality," the second book in the American Social Progress Series, recently inaugurated by The Macmillan Company. At the outset of this work President Hadley notes the contrast in the life of the American people between its standards of private and of public morality, and then examines into the reason for this contrast with particular reference to the two chief forms of organized social activity—business and politics.

ORIGINAL ARTICLES.

THE SIGNIFICANCE OF VERTIGO OCCURRING IN CONNECTION WITH DISEASES OF THE EAR.*

BY WALTER A. WELLS, M. D. Washington, D. C.

Vertigo is almost universally attributed by the layman to a disorder of the stomach, and this view, it must be added, outside of the aurists and neurologists, who are naturally inclined to look for a different causation, has quite a general hold even upon the medical profession.

In the course of a routine examination of my aural patients, I usually ask this question: "Do you suffer at all from vertigo?" The answer I obtain is generally something like this: "O yes, I have frequent spells of giddiness, but they come from my stomach;" or, "I am subject to biliousness, attended with vertigo;" or, "I am taking a course of treatment at present with the stomach specialist for this;" and they usually add, "but I cannot see that I am any better."

If we question these patients more closely, we will generally elicit the fact that the vertigo comes on quite independently of any errors of diet, and upon careful examination and application of the functional tests, we will discover in a surprisingly large proportion of such cases unmistakable characteristics of a vertigo of aural origin.

The idea of the gastric causation of vertigo owes its origin no doubt to the fact that in a certain class of cases, the vertigo is associated with nausea and vomiting—symptoms which very naturally suggest a diseased stomach. We shall speak later of the type of aural vertigo, commonly known as Meniere's disease, in which the patient is suddenly taken with vertigo, ringing in the ear, and vomiting and becomes almost completely deaf. An extreme pallor is generally present, a cold perspiration breaks out on the forehead and the patient, as a rule, falls as in syncope but without losing consciousness. The deafness, tinnitus and the vertigo are symptoms proper of labyrinthine lesion, but the nausea, vomiting and other associated symptoms are due to the fact that the apparent impulses which reach Deiter's nucleus through the vestibular nerve, overflow and set up irritation in the pneumogastric nucleus, and other medullary nuclei which are in the immediate vicinity.

In order to understand how vertigo is produced and what the organs are, lesions of which give rise to this phenomenon, we must consider, first of all, by what process we ordinarily acquire our sense of position and equilibrium.

* Read before the National Association of Pension Examiners, Washington, D. C., May 6, 1907.

Peripheral impulses which serve to inform the centres with regard to the movements of the body, are derived from the entire muscular system, and probably also in a very great measure, from the viscera. The sense of touch, and especially that in the plantar surface of the feet, plays an important role in maintaining equilibrium; of particular importance are the sensations derived from the eye-muscles whose varying movements inform us of our relation to surrounding objects.

But it is now universally conceded that the chief source of impulses, which serve the purpose of equilibration and orientation, are derived from the labyrinth.

In the vestibule and the semi-circular canal, we have the organ which has essentially to do with the sense of the position of the body in space.

The labyrinth, as we well know, is an organ having two parts with totally different functions, although anatomically connected in one continuous structure. Its anterior part, the cochlea, is concerned with hearing only, while the posterior part, the vestibule and semi-circular, as stated, subserve the function of equilibration.

Corresponding to this division of function, the eighth nerve becomes separated into two parts, the cochlear branch being distributed to the cochlea, and the vestibular, with its ampullar offshoots, going to the vestibule and semi-circular canals.

Within the bony labyrinth is contained a membranous labyrinth, the membranous semi-circular canals following the model of the bony structure, but being not more than one-third or one-fourth of its dimensions. The vestibule contains two membranous sacs known as the saccule and the utricle. The membranous labyrinth contains a fluid known as the endolymph, and between the walls of the membranous and bony labyrinth there is a fluid known as the peri-lymph.

The nerve filaments of the vestibular nerve terminate in minute, delicate hair cells, which are very sensitive to the movements of the endolymph. Thus a change in the position of the head determining movements of this fluid in certain ways, disturbs these hairs and gives rise to sensations which, conveyed to the centres, enable us to judge at once the direction and the extent of the movements of the head. The semi-circular canals are so placed that each is at right angle to the other two and they correspond to three ideal positions of space.

We can readily understand how vertigo, due to erroneous impression of our position can arise, by any disturbance in this apparatus which will irritate hair-cells in a manner different from the way in which they are physiologically stimulated.

Continuous rapid rotation of the body causes the endolymph to travel along the walls of the canals and stimulate areas, which correspond normally to entirely different body positions, with the result of producing false sensations of position.

Like effects may be produced by lesions in any of the apparatus supplied by the vestibular nerve, or by disturbances in other parts of the auditory apparatus which lead to an undue increase of labyrinthine tension.

Ordinarily, increase in the tension of the labyrinthine fluid is provided against by the round and oval windows. These in the normal state are mobile structures, which readily yield to pressure of the fluid and so act as a sort of safety valve when the tension of the labyrinth is from any cause unduly augmented.

In many affections of the ear, it happens that this safety valve arrangement is seriously interfered with, and thus the individual becomes the prey of vertiginous sensation.

While the proximate cause of the vertigo is always a labyrinthine disturbance, we can readily understand that it is not necessary that there should be some serious lesion here, such as a caries, a labyrinthitis or a tumor, in order that the vertigo be present.

In many cases, the labyrinthine disturbance is but a slight secondary disturbance due to a middle ear process.

Ordinary catarrhal or suppurative otitis media, leading to cicatricial contraction of the tissue or immobility of the ossicles, may give rise to the symptom.

In the condition known as otosclerosis, fixation of the stapes is the almost invariable sequence and it is, therefore, in this disease that we more often have vertigo than in any other middle ear trouble.

Chronic suppurative processes, especially when cholesteatomatous masses develop, are likewise productive of vertigo and we can readily understand that when complicated with polyps or other tumors which obstruct drainage, there is even greater likelihood of the occurrence of this symptom.

Marked and persistent dizziness in this class of cases is significant as indicating that the suppuration process is advancing upon the internal ear. We should test, in various ways, the patient's capacity for equilibration, and orientation, and if found deficient, operative measures should be undertaken without delay.

The cause of the vertigo is sometimes located also in the external ear. A simple plug of wax may give rise to vertigo of a most serious type. Mycosis or a foreign body pressing on the drum membrane may have some effect.

The primary trouble is also located at times in the eustachian tube. The ill effects of deficient ventilation due to obstruction in this canal are too well known to need to be emphasized.

A French aurist, Royet of Lyons, recently insists that a large number of cases of vertigo and even some of a most severe type are due to ad-

hesions about the mouth of the eustachian tube in the naso-pharynx. Breaking down these synechiae, he claims, is very successful in curing the complaint.

In 1865, Meniere described a type of vertigo, which he believed to be due to an effusion of bloody lymph into the semi-circular canals, inasmuch as in one patient, examined by him, this condition was actually found. Since his day, the apoplectiform type of vertigo, marked by the occurrence of four cardinal symptoms, vertigo, deafness, tinnitus and vomiting, is usually spoken of as Meniere's disease, or syndrome. The latter is the better term, as it has been proved that this group of symptoms is by no means pathognomonic of the pathological state, described by Meniere, but occurs in a variety of aural diseases. Gelle, who had opportunity of examining several such cases P. M., more often found present a sclerotic process with fixation of the stapes than any other lesion.

A question of considerable interest is whether or not aural vertigo, other than the type we have just mentioned, has any peculiarities which enable us to distinguish it from vertigo due to other causes.

The presence of other ear symptoms, deafness and tinnitus, and the finding of actual disease in the ear is of course very strong presumptive evidence.

Corroborative evidence of a conclusive nature may usually be obtained by the tuning fork.

When the labyrinth is affected to any considerable degree, it will certainly be indicated by a loss in bone conduction. The tuning fork will be laterilized to the sound side and Rinne will probably be positive; at least Schwabach will be shortened.

When the tests indicate a lesion in the internal apparatus it is said that a loss of perception for the high notes is especially characteristic for labyrinthine disease. If these are not affected, in such a case there is reason to believe that the lesion is either central or located somewhere in the course of the nerve. In this connection, it may be mentioned that the certain identification of vertigo, as an aural symptom, may be of considerable value to experts required to examine pension claimants with regard to deafness. We have to deal so frequently with malingering in these cases that we ought always to take the vertigo into consideration, especially as the claimant does not as a rule recognize its significance; and when the functional tests accord, we have confirmatory evidence of an actual disease of the labyrinth that may assist materially in forming a judgment as to whether the deafness is real or feigned.

Besides the functional tests, we sometimes have in the vertigo itself, certain peculiarities that distinguish that of aural origin from other kinds of vertigo, viz.: In aural vertigo, either the patient himself or the objects about him, seem to move in a definite direction, as from right to left

or vice versa; second, the vertigo will not be better, but rather worse on closing the eyes; third, the equilibrium is the more disturbed on the side on which the ear is affected. For example, then, the patient stands on each leg separately, the disequilibration is more noticeable when standing alone on the leg corresponding with the affected ear. If the patient falls, it is usually towards the affected ear.

Von Steen, of Moscow, in order to accurately test the state of equilibrium in aural patients, has constructed an apparatus which he calls a goniometer. For practical purposes a satisfactory idea can be obtained by simply having the patient perform certain manoeuvres, such as hopping on one or both feet with eyes closed, and open, and noting the deviation from normal.

According to some authors lesion in the non-acoustic labyrinth is evidenced by a disturbance of the dynamic as well as static function of the muscles. Information on this point can be gained only by the use of such apparatus as the ergograph or dynamometer.

In locomotor ataxia, there is present a disequilibration, due to inco-ordination, that we ought to have no trouble in distinguishing from aural vertigo. The absence of the knee-jerk, the Argyl-Robertson pupil and the characteristic gait are as a rule sufficient for a diagnosis. Cerebellar lesions are likewise accompanied with an ataxia, which ordinarily is so characteristic, that confusion ought not to arise. In case of doubt, the occurrence of atrophy and other cerebellar symptoms would be conclusive.

A vertiginous sensation in some cases represents the aura of an attack of epilepsy, and in some cases of petit mal, it may represent the whole attack. The neurotic element in these cases, and the history of the occurrence at any time of biting the tongue, foaming at the mouth or loss of consciousness, would prevent an error of diagnosis.

Aural vertigo is not accompanied with loss of consciousness; although in the apoplectiform type of Meniere a syncope sometimes occurs due to extension of the irritation to the bulbar centers.

Vertigo is sometimes a symptom of arterio-sclerosis. The age of the patient, the atheromatous state of the arteries, and the absence of any other cause of the vertigo will enable us to diagnose this form without much difficulty. Finally we may mention a rare form of vertigo which has been described under the name of *ictus larynge* or laryngeal vertigo.

The patient, who is usually adipose or gouty, has first a tickling sensation in the larynx which brings on an attack of coughing. Suddenly he loses consciousness, and the head drops if the patient is in sitting position, or he falls if the attack overtakes him while on his feet.

The peculiarities of this affection, which, strictly speaking, is not a vertigo at all, are such that there ought to be no question of a confusion with the kind of vertigo we have been discussing.

Aural vertigo is an affection which in the opinion of the author ought to receive some recognition in the examination of claimants for pensions. It is true that a subjective symptom (except when accompanied by such a state of disequilibrium, that the patient cannot maintain an upright condition), and subjective symptoms are given very little weight in our instructions for examinations. But, for that matter, deafness and blindness are also subjective symptoms, and these are both recognized as disabilities entitling the claimant to liberal ratings.

Vertigo arises from disease of the same organ as does deafness, and objective conditions causing it can just as well be made out.

When assuming the severer types, it is often a most distressing malady. All exertions such as lifting, precipitate the attacks, so that many kinds of manual labor are closed to this class. Indeed, certain employments such as require one for example, to go on top of a building, or other elevated places, or to drive, or to ride a bicycle, must be regarded as not entirely free from danger.

The object of this paper has been accomplished if it has succeeded in bringing forcibly to your attention the following points in regard to the malady which we have chosen as our subject.

1. Vertigo is very seldom of gastric origin, the majority of cases supposed to have this origin being in reality dependent upon some disease in the auditory apparatus.

2. The proximate cause in all cases of aural vertigo is in the semi-circular canals and vestibule of the labyrinth, as it is here is located the peripheral apparatus concerned with the spatial sense.

3. The labyrinth, however, is not necessarily diseased in aural vertigo, as a great variety of conditions of the middle ear and even the external ear, which react upon labyrinthine tension, may constitute the primary lesion at fault.

4. Aural vertigo has peculiarities of its own, which taken in connection with the associated symptoms, the objective signs, disease in the auditory apparatus and the tuning fork tests enable us to diagnose it with reasonable certainty.

5. In many instances the vertigo is of such a serious nature as to interfere materially with performance of manual labor. We therefore deem it worthy of consideration in estimating the disability of a claimant for pension.

The Rochambeau, 815 Connecticut avenue.

COMBATING PLAGUE IN JAPAN.

BY SHIBASABURO KITASATO.

(From the Institute for Infectious Diseases, Tokyo, Japan.)

Plague Epidemics and Their Detrimental Effects.—In 1896 the epidemic of plague which had previously raged in India and Hongkong invaded Formosa, which from that time became a source of the dangerous pestilence. In this insular possession of Japan, a condition was produced in which the eradication of the etiological factor became almost impossible, and the situation began to menace the mother country. However, strict enforcement of preventive measures and quarantine precluded the entrance of plague from this into the main islands of Japan, but danger to our country was present from other sources, for the first case of plague encountered during this epidemic was found aboard a vessel which entered the port of Yokohama in 1896. The ship brought the dangerous germ from India and from southern China, with which regions Japan has frequent commercial intercourse. Since this event, steamers arriving at the same port and at Nagasaki and Kobe have brought in several cases of bubonic plague, but, as the discovery has always been made in time and preventive measures and quarantine have been promptly applied, infection has been avoided for the time being.

However, the origin of the epidemics in Japan has been located not in the patient but in inanimate objects. Incoming vessels from the infected regions—that is, from Bombay and Hongkong—began to introduce into the country the plague germ mingled with their freight, which principally consisted of cotton. The Government being unaware of this dangerous importation, the freight was allowed to land and as a consequence the infection rapidly spread in the principal trading ports. At first the epidemic prevailed among rats; afterwards it attacked human beings, with the result that many human lives were sacrificed, tens of thousands of yen of State money were expended, and the foreign trade of the country also suffered considerably.

The principal epidemics in Japan have been as follows: The first outbreak was that during the years 1899 and 1900. It began in Kobe; spread to Osaka, where its ravages reached a high mark, and then invaded Hamamatsu and Wakayama. The total cases in this epidemic numbered 230.

The second invasion was in 1902 and 1903, the source of this epidemic probably being in cotton which was imported from Hongkong. The initial cases occurred in Yokohama and it then spread to a district in

Tokyo. The epidemic was stopped by the combined efforts of the two cities after it had claimed 71 victims.

The third outbreak occurred in 1905 and is still prevailing. Throughout different localities—namely, in Tokyo, Chiba, Kobe, Osaka, Kagawa, and Moji—a number of victims have succumbed to it. The disease appeared in Tokyo in the early spring, chiefly in the Fukagawa district, and it then spread to the Chiba prefecture, where a summer epidemic prevailed to a slight degree. The origin of the outbreak in Kagawa, lasting from May to the middle of June, appears to have been similar to that of the Osaka and Kobe epidemic and it was evidently due to direct contagion; its severity has been unparalleled in recent years. Two plague patients were found in the city of Kobe in August and the number of cases increased rapidly within the next few months, so that during the year the total number of victims amounted to 90. Next to Kobe, Osaka suffered most severely, there having been many cases since October of the past year, the number reaching 134 in three months. In both cities the outbreak spread throughout all the districts and it is still raging. Plague has also appeared in Shimonoseki and has claimed nine victims in that city. This epidemic has had no precedent both in its severity and in the number of its victims, the total of the cases during the year having reached 297.

The following table shows the regions of Japan in which the series of outbreaks occurred and the number of patients in each:

	Year.	Patients.	Deaths.	Principal regions of the epidemic.
First outbreak.....	1899	62	45	Kobe and Osaka.
	1900	168	153	Kobe, Osaka, Hamamatsu, Wakayama, and Nagasaki.
	1901	2	2	Wakayama.
Second outbreak.....	1902	14	9	Yokohama and Tokyo.
	1903	57	49	Do.
Third outbreak.....	1904	1	1	Kobe.
	1905	297	257	Tokyo, Kobe, Osaka, Chiba, Kagawa, Moji, and Nara.
Total.....		601	513	

The number of patients during the past year, distributed in different localities, is as follows:

Tokyo, 15; Chiba, 11; Osaka, 134; Nara, 2; Kagawa, 36; Kobe, 90; Moji, 9; total, 297.

In Japan the cost of preventive measures and quarantine has reached an enormous figure. During the first outbreak the city of Osaka expended more than 352,500 yen; during the second, Tokyo city spent

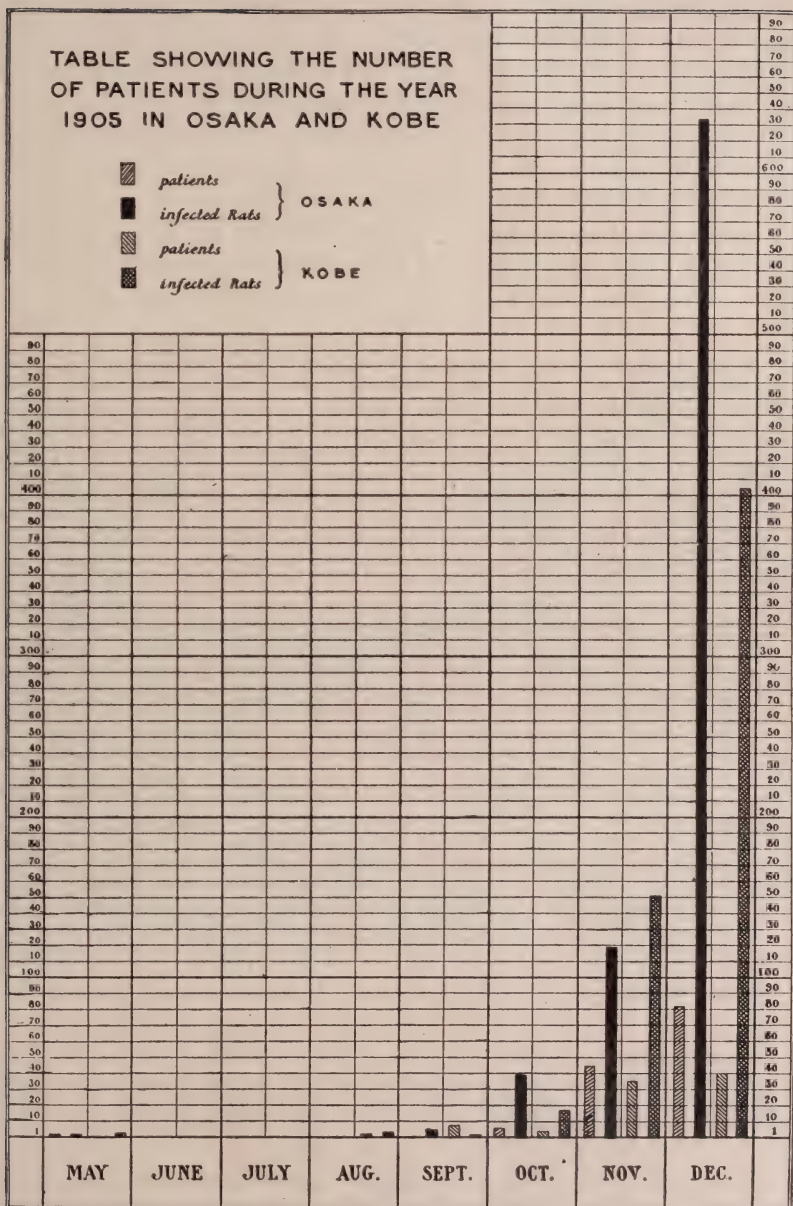


FIG. 1.—Table showing the number of plague patients and infected rats during the year 1905 in Osaka and Kobe.

320,000 yen, although the number of patients there only numbered 15—i. e., 21,333 yen for every victim. These figures show the expense of plague outbreaks even when they are considered apart from their dread-

ful effect upon human lives. From the facts already given it will not be difficult to infer how much the present epidemic, which is raging in Kobe and Osaka with unparalleled vigor, will burden the financial resources of the country. Already the city of Kobe has given out 310,000 yen and Osaka city 470,000 yen for its prevention; and it is apparent from the present conditions that we will have to spend considerably more money to keep the plague at bay.

Such is the direct burden of plague upon the finances of a country, but this is not all; for the indirect detrimental effects must also be considered. This loss, indeed, can not be estimated, because it is a wide



FIG. 2.—Showing area in which disinfection of houses and the destruction of rats is being carried on. The infected area may be seen inclosed within a zinc wall.

and far-reaching one, affecting both domestic and foreign affairs and one which can not be compared with that of an epidemic of any other kind which involves only its direct damage upon a limited community. Plague, indeed, is a fearful enemy to mankind.

Two methods of invasion are apparent from the studies of the epidemics in Japan: One is contagion from imported plague patients and the other by contact with the disease germ mingled with the freight brought in from some infected region. The nature of the preventive measures to be employed depends upon the source of the epidemic. If the invasion be by means of a plague patient, discovery is made easier and prevention or quarantine, as the case may be, can promptly be applied, so that the

depredations of the disease may be confined within a small radius. On the other hand, if the organism is being propagated through the medium of rats, preventive measures are difficult; for, by the time infected rats are discovered, human beings have already become victims. Moreover, as a rule, by the time man receives the contagion from rats, the ravages of an epidemic have already reached serious proportions among these animals, so that the outbreak soon assumes a character which renders control difficult; the infection therefore spreads far and wide, affecting both men and animals. Such a result is illustrated by the first outbreak and by the present one in which Nagasaki and Kobe are the chief sufferers. The results at Chiba and Kagawa can be taken as an example of a



FIG. 3.—Rat-proof zinc wall inclosing the buildings of a cotton firm, Fūkagawa, Tokyo.

case where the source of the epidemic was in human patients. In this outbreak we were able to keep the epidemic confined within a small locality by promptly applying the usual preventive measures—that is to say, before the rat was attacked by the germ. We can thus see that the same preventive measure may give different results in different cases.

In every epidemic it is difficult to ascertain the exact circumstances under which the plague invasion occurs. This is especially true when the medium of propagation is outside the human patient, and it is notably the case where rats are the agents. So far, in every case, the plague outbreaks in Japan were first evidenced in localities which have direct communication with foreign countries and from these points the spread

to the regions of the interior occurred. Moreover, the first case in any place which subsequently became a source of plague was invariably associated with freight imported from India or from Hongkong. The first epidemic owes its origin to a steamer which entered the port of Kobe with a cargo of raw cotton and Chinese rice from Bombay and Hongkong. The second one may be traced to a vessel which came to the port of Yokohama with freight consisting of raw cotton. The present great epidemic which prevails in Osaka and Kobe is due to a steamer which anchored in Kobe harbor laden with a consignment of raw cotton from Bombay. These statements demonstrate the almost identical origin of the fatal pestilence in each instance.

As a rule, the plague germ on entering these trading ports does not immediately attack man; it first infects rats and by the time the first human victims are discovered, the epidemic has assumed a well-advanced form; this fact has been demonstrated on several occasions. The present epidemic in Osaka may be considered as an example. In February it was preceded by the discovery of infected rats, but only during May of the same year did human victims begin to appear, thus showing how deep rooted was the source of the infection.

The season during which an epidemic occurs has a marked influence. Thus it is apparent that a winter outbreak is generally of a most chronic character; it rages for a long period with great severity, spreading over a large extent of territory. The first invasion, the present epidemic in Osaka and Kobe, and the second one in Tokyo and Yokohama, belong to this class. A summer epidemic is usually acute in character and as a rule is spread by contagion. It may be severe though of short duration, and it is limited to a small area. The epidemics in Chiba and Kagawa during the past year and that of Hamamatsu in 1900 were of this nature. It should be noticed that during a winter epidemic a large number of infected rats are met with, while in a summer one but a small number or even no infected rodents are encountered.

Preventive Measures.—As the plague epidemics in Japan, according to observation, originated in the Indian Peninsula, in Southern China, and in Formosa, the first and most urgent step to prevent the introduction of the disease was to establish quarantine against vessels coming from these regions. With this end in view, quarantine stations were erected at Yokohama, Kobe, Nagasaki, Moji and other principal trading ports and the necessary measures enforced as strictly as possible. So far, several cases of plague have been discovered on board vessels coming from the infected regions; but as a result of the strict quarantine, the danger of contagion has been prevented. When a ship is found to have plague infection on board, all communication with the land is stopped, measures are taken to destroy the rats, and other sanitary precautions are employed. In order

to provide the means for killing rats on board ship, auxiliary vessels especially fitted for that purpose and similar to those used in Hamburg, Germany, are recommended. We now have several of these at Yokohama, Kobe, and Moji, and they will be employed during the present year.

The Department of the Interior of the Japanese Government, through the Bureau of Public Health, which belongs to that Department, names officials who are to meet to discuss and execute measures for the prevention of infectious diseases. These committees consist of physicians and surgeons with assistants and quarantine commissioners. Each municipality or prefecture has also its established board of health, which consists of one physician, several assistants, and a number of inspectors. This organization is placed directly under the control of the police department, and it takes charge of all matters relating to infectious diseases. The principal prefectures and districts are provided with isolating hospitals to receive patients and with laboratories for investigation and these boards of health carry out the necessary preventive measures. In case of a plague outbreak, the prefectural government increases the number of health officials so as to meet the emergency. When an epidemic of an unusual nature takes place, an imperial rescript is issued by means of which the organization of a special board consisting of commissioners, inspectors, clerks, and watchmen is ordered for fighting plague. In addition, several councilors are appointed to submit advice relating to the matter. The municipal government of Osaka has increased its staff by 311 officials and a number of councilors because of the present outbreak.

In Japan all affairs relating to health and sanitation, particularly to the prevention of infectious diseases, are referred to local administration, the execution of the necessary measures being carried out by the aid of the police. The expenses required for the purpose are shared by the people of the locality in which the disease occurs, aid also being given from the financial resources of the prefectural or municipal government. In case of an outbreak of contagious disease, the Central Government will give assistance to the local ones to an amount not exceeding one-sixth of the total outlay. However, in the case of plague, the Central Government has spent and is spending an amount enormously in excess of that fixed by regulation.

The Institute for Infectious Diseases acts as councilor to the Government in matters relating to health, and it especially advises in regard to the preventive and sanitary measures which are to be taken against infectious diseases. When a plague epidemic exists, our Institute, through governmental appointment, furnishes those commissioners and officials who are to take charge of the preventive and sanitary measures. It has a plague laboratory constructed in conformity with the most advanced methods and in this place pest serum and vaccine are prepared for the

use of the entire country. As a part of its work the institute gathers a number of physicians and surgeons throughout Japan in order to give them instruction in bacteriology and epidemiology. The number who have finished this course at present amounts to 1,293, and these physicians are scattered throughout the country. At least a portion of them are now actually engaged in important work in hygiene and preventive medicine. As these specially educated physicians and surgeons are distributed throughout Japan, it is a matter of ease in an emergency at once to gather several hundreds of commissioners. To fight plague successfully requires



FIG. 4.—Excavations made in searching for rats in the ground, under the first floor of the warehouse of a cotton firm, Tokyo.

a large number of trained men, and the country owes its thanks to the Institute for rendering so many available.

Such, in brief, is the account of the organization of the preventive work which so far has been instituted in Japan. However, I must here express my sincere admiration and surprise at the manner in which your country is protected from pestilence. You have medical officials stationed at the principal ports of the world which plague frequently haunts, so that inspections are made at the places from which vessels clear. I believe preventive measures against plague to be the most urgent need of the age, but in order to be of permanent good they must include, as is the case with the United States, not only temporary means for preventing the intrusion of the disease to be enforced at the ports of entry, but also

medical officials to be stationed in infected regions, at which points any vessels starting for the country in question can be strictly examined. I am of the opinion that it would be advisable to place such officials at Indian and South China ports to which the plague outbreaks in Japan have been traced.

In combating plague, the quarantine of ports, however strict and complete it may be, can not safely be relied upon and for this reason general provision throughout the country must be perfected against infectious diseases. As plague can not be classified with the ordinary ones



FIG. 5.—Bacteriological laboratory of the Tokyo Metropolitan Police Board. Examination of rats for pest infection.

of this class, the regulations to meet such emergencies in Japan were found in general to be unsuitable, so that the Government was compelled to remodel them in order to meet the condition. The principal features of the new regulations are as follows:

1. Authority for disinfection, isolation, and quarantine is given. Measures looking to the prevention of the disease are to be enforced not only against the living patients and in respect to the houses and furniture occupied and used by those actually stricken with plague, as well as of those who are only suspected of having the infection, but also in regard to the bodies of those dead with plague.

2. To prevent the spread of the infection, as many rats as possible are to be killed.

3. The period of isolation of suspected patients is not to be less than ten days.

These modified regulations were based upon the experience of several years. In carrying out measures of disinfection it is necessary to extend the area to be covered as far as possible, as the plague germ is very easily propagated. It is also true that bubonic plague often develops into that of the pulmonary or pneumonic type and in that event the disease not infrequently infects by direct contagion therefore, especially in times of epidemic, quarantine and isolation must be strictly enforced. It was thought necessary to fix the time of isolation at ten days because of the fact that the incubation period of the disease lasts from six to seven days. The killing of all rats which it is possible to secure was deemed a necessity, as these animals have the closest connection with plague. The above principles were applied where the intrusion of the pestilence was suspected even before the formulation of the new regulations.

In attempting to catch rats it is important to remember that traps and appliances should be set in all buildings, and it is imperative in those which contain cotton and grain, in which the plague germ is most liable to be retained. I gave warning in this respect a few years ago and as a result the municipal government of Tokyo has passed an ordinance respecting buildings and warehouses which provides that all buildings must be constructed in a manner to prevent their becoming an abiding place for rats. A similar regulation has been adopted in other cities and prefectures, especially in those having direct connection with foreign countries. These legal acts appear to be rather despotic, but nevertheless they must be deemed necessary in view of the dreadful character of the disease which is propagated by these rodents. I believe that the extension of similar regulations to dwellings so as to render all of them rat proof would in the future generally lessen the danger from the infection. Such a step has yet to be taken.

Sanitary Work.—The principal undertakings established for the enforcement of preventive measures are (1) bacteriological examinations; (2) search for patients; (3) killing of rats, disinfection, and the application of sanitary methods; and (4) disposal of patients and of infected articles. The work may briefly be described as follows:

The bacteriological laboratories in the different districts and prefectures are for the study and diagnosis of plague, and in times of epidemic they are used solely for this especial purpose. In such cities as Kobe, Osaka, Yokohama, and Tokyo, which are most frequently threatened by pest, the Government for several years past has been encouraging the destruction of rats by buying all which are killed or captured by the people. This practice has a twofold purpose—one the prevention of an epidemic, and the other the ascertaining whether any infected animals, the

presence of which usually precedes an epidemic among men, are existent. An immense number of rats is bought by the Government and each one of them is examined bacteriologically. From 3,000 to 4,000 rodents are examined daily even in ordinary times, but when an epidemic occurs the number is increased to an enormous figure. As plague outbreaks in Japan are usually preceded by rat infection, these examinations are to be regarded somewhat in the light of a reconnoissance. The utility of this precaution is illustrated by the fact that in 1904 an infected rat was discovered in Yokohama before any human victim had been found and as a result the source of the infection was sought and



FIG. 6.—Bacteriological laboratory of the Tokyo Metropolitan Police Board. Examination of rats for pest infection.

finally traced to a British steamer, the warning being given in time. During epidemics the examination of rats is even more necessary, for it is only by such a process that the condition and the manner of propagation of the pestidence are actually known.

To judge from the experience of the past, it can be suggested that in examining rats particular attention should be paid to their submaxillary and cervical glands and to the spleen. These organs in most cases show the evidence of infection, if there be any. The inference to be drawn is that the rat receives the plague germ through the mucous membrane of the mouth and throat.

An important work during an epidemic is the bacteriological exami-

nation of specimens obtained from the patients and the dead, for the diagnosis must depend upon both clinical and bacteriological observation. In suspicious cases, material for investigation is taken from the affected parts, such as the glands or skin. The sputum of the patient is also frequently subjected to examination. In the dead, the heart's blood and spleen and the contents of the glands or lungs are scrutinized. Microscopical examinations are undertaken, cultures are made and animal experiments are performed with the specimens which are gathered. Agglutination by a pest serum of the bacteria obtained is also studied. Obviously it is often difficult to assure one's self of the discovery of an infection by any of these means, but there are many cases on record where suspicious substances, such as cotton, filth, and rotting grain harbored the *Bacillus pestis*; as an illustration I will cite the fact that in 1899, in Osaka, cotton waste was found to contain the plague organism.

The searching for patients, especially when the first invasion of plague is suspected, is also an important portion of the preventive work. Physicians are expected by law to report any infectious disease which they discover, but such reports are in most cases not reliable; indeed, during an epidemic period this source of information reveals only about one-tenth of the whole number of cases actually existing. In the localities which have never before been visited by the plague, the physicians themselves are ignorant of the nature of the disease and they may thus permit an outbreak to spread rapidly. This unfortunate condition was illustrated in Kagawa during the past year.

As a means of promptly seeking out patients in places which are frequently in danger of an outbreak of pest, the physicians attached to the police are given authority to examine the bodies of all persons dead from acute febrile diseases. During epidemic periods such examinations give results parallel to those obtained by the investigation of the rats which are caught, and that such precautions can not be neglected is shown by the experience obtained in the past. The following table gives the number of plague patients discovered during the outbreak in Osaka and Kobe during the past year:

	Osaka.	Kobe.
Physician's reports	49	30
Inspection of dead	27	26
Inspection of houses	34	33
Among the isolated suspects	20	0
Miscellaneous	4	1
	<hr/> 134	<hr/> 90

The value of the inspection of the dead is apparent, for the foregoing table renders it evident that in Osaka 27 and in Kobe 26 instances would have occurred in which bodies which really were infected with plague

would have been regarded as being dead of other diseases and thus the number of foci of the epidemic would have been increased.

The inspection of apparently healthy persons living in an infected locality or its vicinity is not an easy task, though a very necessary one. Epidemics are most liable to prevail in places where ignorant people reside and this fact alone greatly hinders the work of the health inspectors. Only by reason of their devotion to duty and work can their efforts be successful. The value of their work was illustrated during the outbreak of the second epidemic in Tokyo. In the latter city, with the exception of three early cases out of a total of 13, a suggestion and warning was given by the diagnosis of plague in persons apparently



FIG. 7.—Male patient. Inguinal and femoral bubos (cured).

healthy and these persons were removed and isolated. During the present epidemic in Osaka not a few of the dangerous patients were discovered by the general inspection of healthy persons. However, the task of finding plague cases by such a method becomes more difficult in proportion as the epidemic spreads and the patients are found scattered over a wider area. As aforesaid, plague in a patient must frequently be diagnosed by both a clinical and a bacteriological examination and the application of such tests must be undertaken as speedily as circumstances will permit. The absolute diagnosis is usually effected within forty-eight hours after the finding of the suspicious patient or of the dead body and during the examination the patient or the dead body is to be regarded as if it were a genuine instance of plague infection.

Even during ordinary times, the killing of rats is enforced in localities where imported freight is stored or where laborers live, and this enforcement is made general when there is danger of an outbreak of plague. At least two days before the general sanitary precautions outlined above are applied rat catching and killing devices, such as traps and poisons, are distributed to every dwelling and warehouse. Formalin vapor or sulphur dioxide is used in buildings which can be tightly closed. All localities which are constructed so as to permit of the abode of rats are rebuilt, the sewage is improved, and all filth is burned. The above constitute the measures employed for removing and killing rats. The occupants of the dwellings in which infected rats are frequently found, or in which plague patients are discovered, are removed and the whole house disinfected and rendered unfit for rodents by the sanitary measures adopted in the killing of rats; in order more effectually to destroy the latter, galvanized iron walls are erected around such houses and all exits of the sewers are closed by means of metal nets. If the infected area is extensive it is divided into small sections, and the same method is applied to each one of these. The first steps in sanitation after these precautions have been taken are to search for and destroy the rats, to disinfect the furniture and finally the entire building. For the latter purpose carbolic acid, corrosive sublimate and lime are used, articles of an especially suspicious nature being at times steamed, boiled, or burned; all of the disinfected objects are ultimately exposed to the sunlight. In case the building is situated in such a manner as to render the application of sanitary measures difficult, it is sometimes desirable to disinfect by burning the entire edifice. Such extreme measures I believe to be especially justifiable where the infection has not as yet spread to a large area, and they are not infrequently made use of in Japan. The galvanized-iron fence or wall which is erected before fire is set to the premises prevents the rats from finding their way to the neighboring houses, and thus possibly spreading the disease.

However, the difficulties attendant upon the entire destruction of houses for purposes of disinfection are in some instances insurmountable, and this is particularly the case when plague patients and infected rats are scattered over a large area. The present epidemic in Osaka and Kobe illustrates such a situation. If extreme measures were to be applied to these cities practically whole districts would have to be burned.

As has been remarked above, the zinc fences prevent the escape of rats during the work of disinfection and their effectiveness in segregating an entire area before an epidemic becomes general has been abundantly illustrated during the outbreaks in Yokohama, Kobe, and Tokyo. These walls present a most peculiar appearance. Their height varies according to the circumstances, but usually it is about three feet, with a foot or two

buried in the ground. Rats can neither climb such a wall nor burrow under it. The use of zinc for such a purpose is apparent, for it is not liable to rust as are other metals, and it may be used repeatedly. These walls have been utilized during every epidemic, the largest one being constructed in Tokyo in 1903. In this instance the area inclosed was three-fourths of a mile square, with partitions dividing it into several sections. In addition, every other place where infected rats were found was inclosed



FIG. 8.—Female patient. Infection of the eyes with pest bacillus (fatal case).
Primary lesion, right eye; secondary lesion, left eye.

within other fences and the total length of the walls so used measured 29,148 feet, or about four miles.

The discovery of a case suspected of having plague is promptly followed by the proper measures to prevent further spreading of the disease. Inspecting physicians hurry to the patient's residence and, if he really proves to be attacked by the pest, the victim is at once conveyed either to a hospital for infectious diseases or to one of isolation where proper

treatment can be given. Should a dead body be discovered infected with the plague bacillus, the cadaver is first disinfected externally and then cremated. Each member of the family and the contacts in the neighborhood are then sent to an isolated detention dormitory, where they are given a daily examination during their term of quarantine. They are subjected to all possible means of disinfection and prophylaxis, including the conferring upon them of passive immunity by inoculation with pest serum, whereas those from the neighborhood who are in less danger of having contracted the disease are given pest vaccine. In every epidemic this serum and vaccine have been generally used, over 10,000 individuals having been inoculated, but we have been unable to obtain exact statistics as to the value of these remedies during the epidemics on the main Japanese islands.

However, during the outbreak in Tainan, Formosa, occurring in 1901, the conditions were such that we were able to obtain valuable statistics and the large number of persons which were inoculated with pest vaccine gave suggestions as to the value of vaccination. Of 10,876 persons inoculated in Tainan only seven were attacked by plague; while out of about 40,000 persons who failed to receive this treatment, more than 500 were infected. From such statistics it is not difficult to believe in the favorable results of vaccination, although we are not yet in a position definitely to determine its value.

Those plague commissioners and officials who from the nature of their duty frequently came in contact with the patients have received prophylactic inoculations of the serum (16-20 cubic centimeters). Not one of these individuals has as yet been infected. Instances are many in which the value of the serum as a preventive has apparently been demonstrated.

For the treatment of plague patients two methods may be recommended—one the extirpation of the buboes and the other the inoculation with serum. The efficiency of the extirpation and of the serum treatment depend on the stage of plague development which exists at the time they are instituted; when performed in an early stage, a favorable result may be expected, but in a later one these measures become futile. As a consequence, it is important to obtain a positive diagnosis as early as possible.

That good results may be obtained from serum treatment in such cases admits of no dispute. During the first outbreak in Osaka, Yersin's serum was used, but owing to the scarcity of the supply of this remedy, the results fell short of our expectations. Since 1900 our institute has been preparing the serum to meet with the constant demand. For the patients actually suffering from the disease, comparatively large quantities (200-240 cubic centimeters) are required for inoculation, and although we are not in a position to ascribe to the pest serum a value as ab-

soluble as to the diphtheria serum, there is no doubt of the efficacy of the former remedy. The following facts demonstrate this:

A series of experiments was conducted in the Tainan isolation hospital (Formosa) with the view of comparing the results of the serum with those of an early extirpation of the buboes and general systematic treatment. Of the 56 patients treated by the latter method, 35 (62.5 per cent) died of plague, while out of the same number inoculated with serum the death rate was only 33.9 per cent. From these experiments it is seen that the use of serum reduced the death rate by about one-half. Our experience during the epidemics in Japan has shown that the most effective



FIG. 9.—Pest bubo of the axillary and cervical glands (case recovered).

treatment is that in which both serum inoculation and extirpation of the buboes are performed in as early a stage of the disease as possible.

Rats as the Propagators of Plague.—The fact that rodents are always closely connected with an outbreak of plague (in all times and places) admits of no dispute. The epidemics in Japan have invariably been traced to rats.

Obviously these animals have a high susceptibility to the pest infection; their habits also constantly bring them in contact with filth in which the plague germ is present, besides which they feed upon one another. These facts must favor the spread of plague. The finding of human victims of the pestilence is almost invariably preceded by the discovery of plague-infected rats. Hence the killing of rats must be resorted to as the

first and most important step in the prevention of an epidemic. In the first outbreak in Osaka and Kobe the pestilence was gradually stopped by an urgent effort directed at destroying these rodents; and the ones in Tokyo and Yokohama were confined to a small area by the strict enforcement of these same measures. The number of rats killed in Tokyo since 1900 and up to the present time amounts to the enormous figure of 4,820,000—that is to say, the average is more than 800,000 a year. In other words, if these dead rats were laid side by side they would extend for a distance of over 75 miles. The price paid by the local government for these animals, which were bought from the people, in Tokyo alone has amounted to 160,000 yen.

However, the extermination of rats is complicated by the fact that the rodent increases at an enormous rate; as a rule within one month of pregnancy the female gives birth to five young ones at a litter, and the young reach puberty and become pregnant at the age of three months; thus these animals multiply in a geometric progression. Furthermore, if rats are destroyed by artificial means, such destruction only lessens the struggle for existence and then the rate of multiplication is much increased. In Tokyo more than 4,800,000 rats have been killed; yet we can hardly notice any considerable decrease in the number of these animals.

In Japan, for killing rats, poisons such as arsenic and phosphorus, together with traps, are chiefly used. The typhoid bacillus of the rat, which has been effectively used for killing field mice, has been found useless for house rats and therefore we no longer employ it.

Someone has offered the following suggestion for the disposal of the usual breed of household rats (*Mus rattus*), which unfortunately is the species most liable to be attacked by plague. This suggestion is to introduce *M. decumanus*, which is a persistent enemy of *M. rattus*, and which is comparatively more resistant to the infection. Such a suggestion appears to me impracticable, for from my actual observation it is evident that so far as epidemics in Japan are concerned the *kind* of rat has been of very little importance in propagating plague. Moreover, the results of biological researches tend to confirm the fact that although two distinct species of rats are found, the one most prevalent in Japan is a race which is a mixture of the two and which is also susceptible to plague. Such a fact rather contradicts the assumption that the two species are natural enemies to each other. Therefore, the above recommendation can hardly be taken as a basis for preventive measures against plague.

The best way to destroy rats in connection with the restriction of pest is to prevent their abiding in or at least to expel them from human habitations. In order to accomplish this purpose I suggest that all buildings be rebuilt according to a plan which will serve this end. This par-

ticularly applies to Japanese houses. because in most cases the latter are built of wood, and such buildings are liable to provide quarters for rats. I understand that the United States is planning a reconstruction of "Chinatown" in San Francisco. I highly approve of such a step in view of the situation of that port, which is constantly threatened with a plague invasion. In Manila, also, the cause of the recent fortunate decline of the plague epidemic, I believe, can chiefly be attributed to the rebuilding of the city since the islands became a possession of the United States.

In Japan, the insular territory of Formosa, which has been invaded by plague, is now being surveyed by the sanitary officials, and the buildings in the central part of Tainan City have already been reconstructed so as to keep the rodents out. As a consequence, the ravages of the pestilence are now practically confined to the villages or to groups of unsanitary habitations of the natives, who live with the rats and permit these animals to flourish.

The following table demonstrates that during a plague epidemic the number of infected rats runs parallel with that of the patients discovered:

	OSAKA.		KOBE.	
	Patients.	Infected rats.	Patients.	Infected rats.
May	1	1	0	2
June	0	0	0	0
July	0	0	0	0
August	0	0	2	3
September	0	5	8	11
October	6	39	4	17
November	45	119	36	151
December	82	634	40	405

The number of rats examined during the past year in Osaka amounted to 1,195,116. Of these, 19 infected animals were found previous to May, making a total of 817 in all. In Kobe 553,616 rats were examined; the number of infected ones can be ascertained from the table. From this it may be inferred that the prevalence of the human infection bears a direct proportion to the number of infected rats found, and that the extent of the epidemic may be known approximately by the area of the localities in which infected rats are encountered.

Our attention is particularly directed to the fact that the fiercest ravages in every epidemic are evidenced in winter rather than in summer. This may be due to the resistance which the pest bacillus has to cold, although it appears that this point needs further consideration. A particularly interesting fact is that in both Osaka and Kobe the number of infected rodents found during the last two months of 1905 was very large as compared with the number of plague patients, and also the statistics up to the middle of January of this year show a remarkable feature in that there were 240 infected rats against three patients in Kobe, and 179 against nine patients in Osaka.

During the present epidemic I have had opportunity to make close observations as to the prevailing conditions, and have discovered an interesting fact concerning the habits of the rodent. Rats generally live on the ceiling below the roof, but in winter they change their abode by removing to the ground just below the floor. Therefore, in order to discover the openings which harbor the rodents, the ground should be dug to a depth of 1 or 2 feet, the rat-holes are thus exposed and the animals can be exterminated. This method, owing to the subterranean habit of rats in winter, invariably secures a great number. These animals are gregarious and consequently, if one of their number becomes infected in the winter quarters, then many must inevitably fall victims to the disease,



FIG. 10.—Infection of left submaxillary gland before the abscess was incised (case recovered).

but obviously there is less danger from rodents which live underground and apart from human habitation than there is from those dwelling in the houses themselves. It is for this reason that during winter epidemics a very large number of infected rats, as compared with human patients, is encountered.

The weak rodents are constantly menaced and frightened by the strong ones, so that the individuals which have been attacked by plague must maintain constant vigilance so as to be able to flee from their pursuers. As a weak rat has not sufficient strength to climb a fence or to reach any considerable height it is obliged to wander on the surface of the ground, thus providing for the spread of plague.

The large number of children who are infected by playing on the ground would seem to emphasize the fact that in this situation the bacillus is most readily encountered. The following table shows the number of children infected with plague during the winter epidemics:

Number of Patients.	1900. Osaka.	1905.	
		Kobe.	Osaka.
Total patients.....	144	90	134
Patients under 15 years.....	56	36	51
Percentage	38.8	40.0	38.6

From the above it will be seen that the number of patients under 15 years of age is more than one-third of the total. The subterranean and gregarious habits of rats, the sowing of the plague germ on the ground, and the large numbers of young patients—all of these are closely connected with winter epidemics.

It is apparent that measures for killing rats must of necessity involve the application of biological knowledge bearing on the habits of these animals, but our knowledge in this respect has yet to be perfected. The methods of destruction used in Japan today consist in the use of poison or of traps. Such means have only a temporary effect and the results of their use can not be considered to be of sufficient permanence to root out the evil. The destruction of rabbits in Australia was undertaken in such a way as to produce a permanent effect and we have much to learn from the method involved. It was based on the fact that the rabbit is a polygamous animal and therefore if as many females as possible could be destroyed by artificial means, the end would be a struggle among the males for their possession. The result of such a practice, of course, can not be expected in a brief period, nevertheless it is of a permanent character. I suggest that something of this nature be planned for the destruction of rodents.

In conclusion I desire to suggest what I consider to be an ideal plan for combating plague. I believe that the fatal pestilence, however obstinate its ravages and terrible its effects, could be fought and vanquished by the persistent efforts of man and I also believe that where human endeavor, backed by money, is determinedly directed against it, it must yield. But the efforts, however laborious, the money however vast, can be of no value unless they be accompanied by the application of scientific knowledge. The danger of plague invasion through open ports must increase in proportion as international commerce progresses and maritime enterprise advances. Again, where man has fixed his abode the rodents accompany him to share it; and the unwelcome creature becomes the cause

of the dreadful evil. In ports which vessels from infected regions frequent, an epidemic of the pestilence may not be difficult to exterminate. But if infection after infection is repeated from fresh importations the expenditure of large sums of money and much tedious effort become involved. In regions like India and Southern China, plague appears to be deeply rooted, prevailing almost incessantly for several years and during each year attacking more than 200,000 victims. It is apparent that we can not avoid the danger of invasion by the pestilence at any moment, so long as we do not cease intercourse with these regions. To be content with the mere placing of quarantine on the incoming vessels from these places or of enforcing rat killing and other sanitary measures in the open ports seems to me to be but imperfect protection. Why not extend the combat to the source of danger and destroy the cause of the evil permanently? Plague is not only objectionable to the people of one locality but it is an enemy of mankind in general. All civilized nations must fight this common enemy. I believe there should be an international conference to discuss a plan to collect money and to organize an international army to combat and vanquish this disease wherever it appears. Expeditions should be sent to the interior regions of India and south China. The cost of such an enterprise would be only a small part of what the civilized nations are constantly expending in keeping armies and navies. Even the amount which every country is spending for the prevention of the pestilence would suffice. My suggestion only lacks a leader, and I see that the United States, one of the greatest nations of the earth, has such a leader in the person of its President, Theodore Roosevelt, who has already done so much for humanity and whose noble works are being admired by the whole world.

CLINICAL REPORT.

AN UNUSUAL TRANSMISSION OF MEASLES. CASE REPORT.

BY A. S. BLEYER, M. D., St. Louis.

Baby T. C., age, 12 days. Diagnosis, measles, efflorescence appearing on the 7th day of age. I delivered this baby, April 2nd; on April 9th, a perfectly typical and intense rash of measles appeared; coryza and deeply injected conjunctivæ and slight cough present. The coryza and cough had been noticed two days before, when the child was five days old, and were spoken of.

The mother had been in excellent health throughout her pregnancy, and stated that she had had measles when a baby. No case of measles could be found or learned about in the neighborhood after a search was instituted among the neighbors, nor any bona fide traceable source of measles beside the following:

On March 30th, at 9:00 p. m., I received two calls almost simultaneously, one of them to a baby in the terminal stage of efflorescence of measles, the other to a woman about to go into labor. The former case was near Vandeventer and Washington avenues, the other near 14th and Chambers streets. The hour was late, and fearing to be long detained at the latter place, I called first on the baby with measles, this address being directly on my way to the confinement case. I did not remove my overcoat, but made a throat examination with a spoon-handle, after which I washed my hands with soap and water, and hurried away, having remained in the room but a very short time.

I arrived at the house of the second patient about forty-five minutes later, removed overcoat and coat in a room adjoining that of the woman, washed my hands very thoroughly, using bichloride solution and nail-brush after soap and water. I then put on a gown and made an examination. The sac was found ruptured and the head was touched with the index finger.

I left the house within a few minutes and did not return until April 1st (two days later) when no examination was made. Patient was confined April 2nd. Puerperium was afebrile and uncomplicated.

April 14th. Rash has disappeared from baby, the course of measles was typical in detail and uncomplicated. To-day there is some talk about three children living across the street, half block west, who were sick several weeks ago, it is said, with measles.

The case of measles near Vandeventer and Washington avenues, was

not visited again, and I did not come in contact with any case of measles from March 30th until after the eruption had appeared in the second case.

Argument:—If the infection was carried in this case by me, the question that arises is, where did the contagium remain for three days before the baby was born? Direct vaginal or intrauterine implantation does not seem possible, and it is not probable that an intermediary person or the room adjoining the woman could have retained the poison for this length of time. I nevertheless feel morally certain that the infection reached this baby through me.

Note:—The question as to the validity of the diagnosis of measles in this case is of course imminent; I do not think that there can be any question but that this was a true case of measles. However, I wish to state that a child of two years, that had never had measles was kept in the same room and did not contract the disease. Another child living on the other side of the porch that had been exposed did not develop measles.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

ACHYLIA GASTRICA.—Schuetz (*Wiener Klinische Wochenschrift*, No. 15, 1907).—Achyilia gastrica is a symptom complex, characterized by the total absence or marked reduction of hydrochloric secretions. The lab-secretion is as a rule markedly diminished. This is not so true of pepsin. A total absence of the last in achyilia has as yet not been absolutely demonstrated. This disturbance in secretion of the gastric mucous membrane will be caused through nervous influences, through variations in the make-up of the blood, but more often through diseased conditions of the mucous membrane.

After the Ewald-Boas test breakfast, the stomach of the achyilia gastrica patient may show a variation in capacity. As a rule, however, there is usually a large amount of contents. This cause seldom occurs before puberty, usually after fifty years of age.

The author is not convinced that there is a tendency to reduction of hydrochloric acid in old age. The existence of a chronic diarrhea, or a tendency of diarrhea should always lead one to suspect the possibility of achyilia gastrica. In the treatment of these cases, the author gives hydrochloric acid, usually with pepsin, a soft diet. The greatest care should be used in the preparation of meats and vegetables and potatoes are to be used only in the form of puree. The use of meats should be restricted, because, as a rule, marked symptoms are produced thereby.

In cases of accompanying diarrhea in addition to the hydrochloric acid, tenalbin is used. Of course, in anemias and neurasthenia, therapeutics should be applied to suit the case.

THE COURSE OF UROBILINURIA IN TYPHUS ABDOMINALIS.—Rubin (*Muenchner Med. Wochenschrift*, March 12, 1907).—Prompted by the publications of Hildebrandt, the author has carried out a series of observations with reference to urobilin in the urine of typhoid patients and presents here a series of interesting charts showing the variation of urobilin in the urine of these patients.

His experience leads him to conclude that the test is a valuable one in the diagnosis of typhoid fever and states that when excessive urobilin is in the urine of a beginning febrile disease that might be taken for a typhoid, the probabilities are that it is not such. The urobilin varies in the urine with the severity of the disease and with the character of same. It is found absent in the early stages of typhoid and begins to reappear with convalescence. The return of urobilin to the urine indicates a favorable course, while the sudden disappearance of urobilin in convalescence may indicate a relapse.

EPIDEMIOLOGY OF TETANY.—Mattauschek (*Wiener Klinische Wochenschrift*, No. 15, 1907).—During the past ten years there have been marked developments in the pathology of tetany. It has been determined that some cases are due to a functional disturbance of the parathyroid glands. Some cases are attributed to acute infectious diseases, gastro-intestinal disturbances, maternity, but by far the largest group are idiopathic. It was found by Pinalis that this class of cases seem to occur in epidemics, occurring at certain seasons and in certain localities.

The author has made a careful study of the cases of tetany that have been reported in the different garrisons throughout Austria and found in two of the garrison hospitals in ten years a record of twenty-one cases, sixteen of which occurred in the months of February, March and April and five of which occurred in shoemakers and tailors. He found that it was not as frequent an occurrence in army as in civil life, which he attributes to the strong constitution of the soldier. The cases were more frequent in certain sections of Austria than in others. The Southern provinces along the sea, for instance, were found practically free from tetany and those in which goitre is quite common were also practically free from tetany. In view of the fact that soldiers come from different sections of the country, that in spite of this fact, certain provinces show by far the majority of tetany cases that it is due rather to the location than to the individual.

DEMONSTRATION OF TUBERCLE BACILLI IN THE URINE THROUGH ANIMAL EXPERIMENTS.—Bloch (*Berliner Klinische Wochenschrift*, April 29, 1907).—The present method of inoculating guinea pigs for diagnosis of tuberculosis takes at least six or eight weeks before the experiment is complete. The author has used the following original method:

Urine well sedimentized and sediment suspended in physiological salt solution. This then injected subcutaneously in the neighborhood of the groin after which the lymph glands in this region were crushed by grasping skin and flesh and making firm, grinding pressure. After ten to twelve days' swelling of the glands occurred, they were excised, found caseous, smears made and the tubercle bacillus searched for and found in considerable number. The crushing and maceration of the lymph glands is the important point of the procedure.

CAUSE OF ICTERUS NEONATORUM.—Knoepfelmacher (*Wiener Medizin Wochenschrift*, No. 19, May 4, 1907).—The author has sought to find a cause for the common phenomenon of jaundice in the newborn. The theories of the absorption of bile from the meconium, the destruction of the red blood cells with a setting free of pigment, the obstructive icterus due to blocking of the biliary channels by pressure, infection or other means, are all discussed and rejected because experiment does not bear them out.

In his own experiments the author found that the viscosity of the bile was considerably greater at birth than three or four days later. Since by a previous series of experiments it has been determined that the greater the secretion of bile the less viscid it becomes; the author therefore con-

cludes: that soon after birth, the liver cells, on account of an increased blood supply to that organ, take on an increased activity with an increased secretion of bile. That the very viscid bile already in the capillaries hinders the outflow of this later product, the intracapillary pressure rises and as a result the bile is partly absorbed from the capillaries into the circulation causing jaundice.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

LOCAL IMMUNITY TO TETANUS IN INOCULATED RATS TREATED WITH EOSIN.—Hidego Noguchi (*Journ. of Experim. Medic.*, Vol. 9, No. 3).—Flexner and Noguchi found in their work on the effect of eosin application to wounds in which tetanus spores were injected, published about a year ago, the peculiar fact that the removal by operation of the spores from the healed and scarred wound did not cause tetanus. It appeared, furthermore, that this condition obtained not only in the inoculated extremity, but also in the one of the other side. This suggested to Noguchi the existence of a local or perhaps even a general immunity, produced by limited growth and toxin production of the growth at the site of inoculation. The limitation of the growth is the effect of the eosin treatment. Experiments made in this direction, that cannot be detailed here, prove the correctness of this assumption. They established that under the influence of eosin a local immunity to tetanus infection or intoxication is produced. That this immunity is due to the production of antitoxin in the local process is shown by the general immunity more or less observed. Which cells are the sources cannot be determined, though Noguchi thinks of the connective tissue cells, or the endothelia of the lymphatics. The general immunity must be explained by the absorption of antitoxin from the local focus. The cells of the latter, in order to show a local immunity, may have undergone a physiological change, making them unsusceptible (*giftfest*) to the action of the specific antigen. Upon what changes in function or structure this quality depends is altogether unknown and all speculation in this direction must remain hypothetical. Analogous phenomena have been observed before; we know through Pfeiffer and Marx the organs in which the antibodies for the cholera vitrio are produced, through Wassermann and Takaki the fixation of tetanus toxin by brain and certain other tissues, and the local production of antibodies by pleural and peritoneal endothelia for the typhoid bacillus. Theoretically, all the observations are very similar and prove that antibodies are produced locally. All of these observations call attention to cells that have been considered as unimportant in their production. Noguchi's experiments show particularly that antibodies can be produced by other cells than those acted upon by the antigen, in tetanus by connective tissue, where the nerve tissue has an especial affinity for the antigen.

ABOUT THE NATURE AND ORIGIN OF TUMORS.—Westenhoeffer (*Berl. Klin. Wochenschr.*, 1907, No. 19).—Ribbert, as reported in the JOURNAL sometime ago, formulated the conception that the growth of tumor cells in the animal organism was in all directions identical with the multiplication of parasites. If the independent growth, especially of malignant tumors, is considered the analogy, one could say homology of these phenomena cannot be denied, and Ribbert logically concluded his discussion by calling cancer cells autochthonic parasites. There is no doubt but that the conception of parasitism is based on the observation that the life of one organism is possible only by the utilization of the living substance of another organism. As far as the conception of parasitism is theoretically concerned the fetus in utero is a parasite. In this way of considering the nature of tumors simply the name is changed; no explanation of the causes of this parasitic transformation is yet possible. While Ribbert remains within the limits of logic and actual facts (and really his way of looking at tumors expresses admirably their clinical and pathologic character biologically), Westenhoeffer loses himself in speculation; his ratiocination is based only on hypotheses and assumptions; it neglects facts that are as firmly established as facts can be for the time being. He is correct in asserting that Ribbert's name for tumor cells, "autochthonic parasites," only expresses the result of direct observation, but does not throw any light on the intine nature of the process, as said above. But Ribbert went as far as with safety he could go theoretically. Westenhoeffer goes much farther, and is, in doing so, compelled to deny or forget things that with our present knowledge cannot be proved as not existing. That is, the specificity of the tumor cells in the great majority of cases, not only the retention of morphologic identity with normal cells, but also of their physiologic and biologic qualities. Eisenberg's famous work on thyroid-carcinomata alone makes such an attempt as that made by this author, a priori, futile. Hypothetically assuming (pretentiously giving as evidence very indefinite results of chemical, physical and other investigations of the physical, chemical and biologic difference of tumor cells from normal cells, made by Blumenthal, Petry, Wollf and others) an absolute change in their intimate nature of tumor cells from normal cells, he finds it plausible to postulate as the origin of tumor cells an atavistic return to a primordial cell (*urzelle*). This, in his opinion, is possible through continuous influences acting on normal cells, releasing them from the limitation conditioned by their arrangement in normal complexes, finally resulting in the arising of cells with all of the mysterious qualities of the "*urzelle*," that in the beginning in this respect (he forgets to think of it) is not an "*urzelle*," because it only arises and lives and becomes a tumor in the organism in which it has become an "*urzelle*." The impossibility of transplanting tumors from one animal to another species, the beautiful work of Ehrlich and his ideas about the inner nature of this fact, do not form an obstacle for at least making worthy of consideration the possibility of return to primordial cells. Kelling's theory of the tumor origin, the ingestion of embryonal cells of animals used as food (eggs, etc.), is less fantastic. The paper of Westenhoeffer appeals to the reader at first as a fine satiric exemplification of the disappointment

that we gradually feel overwhelming us in recognizing how limited our knowledge is and how limited our means are to widen it. The pity is that it is not a satire, that it is published as a subject calling for attention and worthy of careful investigation. It is an interesting contribution to our literature, showing the ways the mind may go, when exact experimentation and study are neglected. It exemplifies the care needed to be taken in the judgment of the revolutionizing discoveries, that the same author has published about the pathology and infectivity of epidemic meningitis, tuberculosis, etc.

THE ACTION OF SUNLIGHT UPON BACTERIA WITH ESPECIAL REFERENCE TO BACILLUS TUBERCULOSIS.—John Weinzierl (*The Jour. of Infect. Dis.* Supplement No. 3, May, 1907).—Having convinced himself that the method used in testing the bactericidal action of sunlight and the results obtained do not indicate the full power of the agent, Weinzierl devised a procedure more suitable. The working with cultures is objectionable on account of absorption of light by the medium and the glass of the tubes and vessels used. Preferably the bacteria are planted directly on glass or paper and directly exposed to the light. In this way the non-spore forming bacteria, for instance *b. tuberculosis*, diphtheriæ, typhosus, cholerae Asiaticæ, etc., are killed in periods varying from 2 to 10 minutes. The time is lengthened when bacteria are not homogeneously distributed, but clumped or grouped together. Saprophytic bacteria of the air require a much longer time. For *b. tuberculosis* the violet end of the spectrum is the more bactericidal. The author's results by direct exposure of bacteria to sunlight indicate that the latter is a much more powerful germicidal agent and consequently a more important hygienic factor than it has heretofore been considered; that the bacteria, when freely exposed to sunlight, are killed in 1-5 to 1-20 of the time that was formerly considered necessary.

CORONARY ARTERIES AND HEART MUSCLES. ANATOMIC AND EXPERIMENTAL INVESTIGATIONS.—G. Hirsch and V. Spalteholz (*Deutsch. Med. Woch.*, 1907, No. 20).

THE SUTURE OF BLOOD VESSELS. IMPLANTATION AND TRANSPLANTATION OF VESSELS AND ORGANS. AN HISTORICAL AND EXPERIMENTAL STUDY.—Stephen H. Watts (*Bulletin of the Johns Hopkins Hospital*, May, 1907).

Both papers represent classic work. Hirsch and Spalteholz have, by ingenious methods and experiments, demonstrated the falsity of the teaching that the coronary arteries are end arteries. The experiments formerly made to produce infarcts by occlusion of the vessels are so contradictory that no conclusions can be drawn from them. By a new operative procedure the authors ligated the descending branch of the left coronary artery in dogs and monkeys. The infarcts were studied by injection and by making the injected organs transparent by means of a benzol and carbondisulphite mixture originated by Spalteholz. In this way the presence of a rich anastomotic connection of the arteries is easily demonstrated, and at the same time the explanation given for the location of

the infarcts and their comparative insignificance as to the obstruction of the main vessel. The reading of this lucid and ingenious report is a rare delight.

The same obtains for the paper of Watts, that comprehensively deals with the history of vessel-suture and the report of original investigations. It is impossible to detail the methods worked out, to go into the single lines of experimental investigation that by the perfection of the operative method was made possible. For practical purposes a great step forward is made by an undoubtedly successful and easy procedure of suturing, anastomosing and transplanting vascular structures with absolute certainty of success and function. It is only natural that the work led to an intense study of the transplantability of organs, and the results have been absolutely novel and surprising. The reversion of the circulation in a thyroid, or the excision and reversion of both kidneys are only instances that show what multiple possibilities the new methods can lend in the study of so far not understood physiological phenomena or biologic processes. Part of the material was known from scattered publications during the last two years. In its entirety it is an imposing result of work, so original and at the same time so delicate that high admiration is due the author. A review of the contents would fill several pages, and even then would not be able to represent the paper. The paper must be studied in its original.

RAPID METHOD OF DEMONSTRATING TUBERCLE BACILLI BY ANIMAL INOCULATION.—Arthur Bloch (*Berl. Klin. Woch.*, 1907, No. 17).—As is well known, the demonstration of tubercle bacilli in injected material by injecting the latter subcutaneously into guinea pigs is, although highly reliable, nevertheless a method that takes four weeks or longer ordinarily, before a result is obtained. Bloch utilized the work of Orth and Wyssokowsch, who injected into the carotid of rabbits tubercle bacilli. Such injections are borne without consequences. If, however, before the injection, a sound was introduced and small lesions of the valves or of the aortic intima were set, the subsequent injection led invariably to a productive endocarditis of tuberculous character. Orth drew from these experiments important conclusions as to the etiologic meaning of a disposition. He obtained the same result later, in rabbits, by injecting intravenously tubercle bacilli and injuring a kidney by squeezing it; a renal tuberculosis followed. Bloch tried in an analogous way to create an artificial disposition of the inguinal glands of guinea pigs; after the injection of the suspension of the suspicious material under the skin of the guinea pig, into the left or right inguinal region, he firmly squeezed between his fingers the inguinal fold of the animal. In normal animals, the glands cannot be palpated through the skin, but if the pressure is exerted carefully around the place of their location, they are with certainty injured. The result of this procedure has been in experiments and in actual cases successful; while without it the glands begin to enlarge only after about three weeks, in the injured glands they reach often in nine days the size of a pea. Lately it has been reported, that even after 7 days, where no enlargement is sometimes observed, the excision of the glands

will reveal the presence of tubercle bacilli in smears and in sections. The practical advance made by this method is exceedingly great. In a case of suspected vesical tuberculosis, where microscopically the urine did not show baccilli, the reviewer has, in nine days, been able, by this method, to prove the correctness of the clinical diagnosis.

NOTE ON AN ORGANISM FOUND IN YELLOW FEVER TISSUE.—Stimson (*Public Health Reports*, May 3, 1907).—Stimson examined after Levaditi's method the brain, liver, head and kidneys of a case of yellow fever. In the kidney he found a very definite organism of the structure and appearance of a spirochaete. It was confined to the cells of the tubules and to their lumina. None were found in the blood vessels, glomeruli or interstitial tissue. Their distribution over the tissue was irregular; while in some areas none were found, in others large numbers were crowded together; again they occurred scattered and singly. In another kidney, preserved in bichloride, no definite organisms were found, but structures very much resembling them. With the suggestion by Schaudinn and Novy, that possibly or probably yellow fever is a spirochaete infection, the observation reported will give the stimulus to wider examination of suitable cases. So far, of course, this single case cannot be utilized to form an opinion.

DIAGNOSIS

IN CHARGE OF

ALBERT E. TAUSSIG, M. D.

PAIN DUE TO ORGANIC AND TO PSYCHIC CAUSES.—Coppioli (*Riform. Med.*, No. 15, 1907).—It is often difficult to be certain whether pain produced by palpation is due to a local organic lesion or merely to a general neurotic condition. The observation of the behavior of the pupils will often enable one to distinguish between these two kinds of pain. Where the pain is due to a local disturbance, its production will be accompanied by a dilation of the pupils, and the amount of suffering will be shown by the degree and the rapidity of the pupillary dilation. Pain of psychic origin, on the other hand, is not accompanied by pupillary change.

PERCUSSION OF THE HEART.—Goldscheider (*Muench. med. Wochenschr.*, 1907, No. 20).—In the recent German Congress for Internal Medicine, Goldscheider again discussed his method of extremely gentle percussion. He advocated the use of a glass rod with one end covered by rubber tubing. The rubber-covered end of the rod is placed upon the chest, the rod held in a slanting position and percussed by means of a finger at a point some distance from the rubber-covered end. The advantages of this bit of apparatus are that the percussion is confined to a small point on the thorax wall and that even a relatively strong stroke on

the part of the finger produces but a faint sound. The direction in which the sound waves penetrate the thorax depends upon the direction in which the rod is inclined. Ordinarily it should lean so as to lie parallel to the boundary to be determined. In percussion along an intercostal space towards the heart, a dullness will be elicited when the rod is inclined towards the cardiac border, some time before the latter is reached. It is only when the percussion note is dull, no matter how the rod is inclined, that we are certainly at a point over the heart. The rod can also be conveniently utilized in determining the boundaries of abdominal viscera, of the pulmonary apices, etc.

A NEW TUBERCULIN REACTION.—Pirquet (*Muench. med. Wochenschr.*, 1907, No. 20).—At a meeting of the Berlin Medical Society, Pirquet, of Vienna, announced a new method of using tuberculin for diagnostic purposes. He was led to his method by an observation made in connection with cow-pox vaccination. It is generally held that revaccination, within a few years after the primary vaccination, is unaccompanied by any reaction. This, he holds, is not quite true and is based upon the fact that the site of revaccination is not inspected until a week or more has elapsed. If, however, the little lesion is examined within 24 hours, a slight reaction will always be visible. It takes the form of the production of a small papule; this he believes to be a specific antibody reaction and to indicate with certainty that the organism has once before been infected with cow-pox vaccine and therefore contains cow-pox antibodies.

He follows a similar procedure with tuberculin. A few drops of the fluid are placed upon the skin and the latter slightly scarified so that some of the tuberculin will be absorbed. If the patient is tuberculous or has ever been so, his blood will contain tuberculosis antibodies and he will react to the tuberculin by means of the production of a small papule at the site of vaccination. The older the patient, the less significant the reaction, since nearly every one has been tuberculous at some time. The most valuable results diagnostically should be obtained in children. He has found the reaction positive in all cases of tuberculosis in children except where there was miliary tuberculosis, tuberculous meningitis, or extreme cachexia. The most striking reactions were obtained in local infections, bone tuberculosis and scrofula.

Two objections to this method would seem to lie on the surface. Papules do sometimes occur after local irritation of the skin, without being the expression of a general reaction. Moreover, there is no way of controlling the amount of tuberculin absorbed by the scarified surface, so that the method might well be not entirely free from danger.

THE RELATION BETWEEN DIAZOREACTION, BACTERIEMIA AND THE WIDAL TEST IN TYPHOID FEVER.—Genken (*Muench. med. Wochenschr.*, 1907, No. 18).—As the result of a careful examination of a considerable number of cases, the writer concludes that, in cases of typhoid fever not treated by means of drugs, the diazoreaction and the presence of typhoid bacilli in the blood go hand in hand. The former occurs only when the latter is demonstrable. As the agglutinative power of the serum increases

the bacteria gradually disappear from the blood and when they have gone, the diazoreaction too can no longer be elicited. In cases, however, that have received salol, calomel or tannalbin, this parallelism does not hold, the diazoreaction not being obtainable even though the blood be rich in typhoid bacilli. The writer hopes that this observation may assist in the solution of the puzzling question regarding the nature of the diazoreaction.

THE EXAMINATION OF THE HEART WITH ELEVATED PELVIS.—Stern (*Ibid.*).—The patient is made to lie on his back, with the legs drawn up and the pelvis raised, by means of pillows or otherwise, so that the body has an inclination downwards of 30 degrees. In this position, the upper border of the area of cardiac dullness and the apex-beat are dislocated upwards, but neither the right nor the left boundaries are altered. The right border of the area of relative cardiac dullness can be much more easily and sharply made out, since the right heart in this position approaches more closely to the chest wall. The cardiac sounds, too, become more distinct, almost inaudible mitral regurgitant murmur in particular becoming more readily recognizable. On account of the passive engorgement of the veins of the neck, a venous pulse can be detected when it would escape observation in the usual positions.

The writer has made a number of comparisons between the cardiac outlines obtained by percussion in this position and by means of the x-rays. There is a striking conformity.

THE FUNCTIONAL EXAMINATION OF THE HEART.—Fellner and Ruvinger (*Berl. klin. Wochenschr.*, 1907, No. 16).—The writers have tested Katszenstein's method in some 70 cases. The systolic blood-pressure is determined by means of the Riva-Rocci apparatus first under ordinary conditions and then after firm digital compression of both femoral arteries. The normal heart responds by a rise in blood pressure of 5 to 10 mm. If there is considerable cardiac hypertrophy, the rise in pressure may be from 10 to 20 mm. If there is cardiac weakness, this rise in pressure fails to appear, indeed there may be a fall of from 5 to 15 mm. In cases of hypertrophied heart, in which the rise in pressure was very slight, they consider this fall of pressure as indicative of a beginning diminution of cardiac strength. Cases of anemia and chlorosis, in which the heart is generally considered to be enfeebled, showed a fall in pressure that often exceeded 10 mm.

In spite of the fact that Katzenstein's method has apparently met with general approbation, one source of error must not be forgotten. It is often impossible completely to compress both femorals without producing considerable pain. The latter almost always leads to a rise in blood-pressure, quite aside from the condition of the heart, and tends to obscure the significance of the observations. Under these circumstances only a fall in pressure, or at least an absence of the usual rise, is of significance.

A MODIFICATION OF THE PHENYLHYDRAZIN TEST FOR SUGAR.—Gruene-wald (*Muench. med. Wochenschr.*, 1907, No. 15).—To 10 c. c. of wine,

add a solution of 1.2 g. sodium acetate in 6 c. c. warm distilled water and 2 drops of acetic acid. Then add 0.6 g. Phenylhydrazin hydrochlorate and evaporate the mixture on the water-bath to 5 or 6 c. c.; cool immediately. Even traces of glucose give a prompt and plentiful precipitate of characteristic crystals. The method is said to make possible the detection of 0.03 per cent. sugar.

THE WIDAL REACTION.—Goethlin (*Hygiea*, 1907, No. 3).—The writer again calls attention to the fact, too often ignored, that no Widal reaction should be declared positive unless agglutination takes place in a dilution of 1:100. A dilution of 1:200 is still better. He does not unreservedly commend Ficker's modification.

THE DIAGNOSIS OF HEPATIC ABSCESS.—Axisa (*Zentralbl. f. inn. Med.*, 1907, No. 13).—A marked leucocytosis is nearly constant. In the urine, the amount of urea is reduced and that of ammonia increased, the latter being 9 to 24 per cent. of the total nitrogen. If levulose be given by mouth in this disease, it appears in the urine where it can be readily recognized. In doubtful cases, the existence of these three symptoms justifies an exploratory laparotomy.

THERAPEUTICS.

IN CHARGE OF

WM. ENGELBACH, M. D.

THE EFFECT OF NICOTINE UPON THE CARDIO-VASCULAR SYSTEM.—Grassmann (*Munch. Med. Wochen.*, May, 1907).—From the vast amount of literature upon this subject combined with the author's personal experience the deduction is made that the use of tobacco produces serious conditions in the cardio-vascular system. Its use during the age of development is given as one of the potent causes for arterio-sclerosis. This process takes place more in the peripheral arteries at first; later after the prolonged use of the heart muscle becomes affected. This is exhibited by the increased pulse rate, the arrhythmia, and the tobacco-angina. The duration of the use of tobacco is more an important factor regarding the condition of the heart muscle than the subjective symptoms. Positive objective symptoms, however, as shown by Traube, can be demonstrated in the form of constant increased pulse rate, increased blood pressure, and hypertrophy of the heart. That nicotine poison has actually produced chronic myocarditis has been proven by Rosenbach, Favarger, Lewin, Kunkel. The history of the use of tobacco is present in nearly every case of organic disease of the heart muscle. The author pleads for a more serious consideration of these symptoms from the use of tobacco, and advocates an earnest discouragement by the profession for the indulgence in this pernicious habit.

THE ACTION OF CHLORAL, DORIMOL, HEDONAL, ISOPRAL, UPON THE HEART AND BLOOD VESSELS.—Mayor (*Therapeutische Monatshefte*, May, 1907).—In this very excellent and extensive article the author considers the action of chloral, dorimal, hedonal, isopral, in detail upon the cardiovascular system. The conclusions drawn are based upon experiments upon different animals (rabbit, dog) and careful comparative observations upon man. In proportion to the untoward effects of these drugs chloral produced the most marked, dorimol next to chloral, and hedonal and isopral the least. It was difficult to establish much difference between the latter two, but they considered hedonal slightly less depressant than isopral. The difference between the ordinary dose used as a hypnotic and the fatal dose could not be definitely stated for man from the deduction of the experiments on animals. The hypnotic dose of hedonal, as given by Dreser as .5 gm. (grains 7), is considered too small. They did not agree with the Russian authors that isopral and hedonal were both less toxic and more effective than chloral. They found, however, that hedonal and isopral, as used in practice, are much less deleterious than chloral. Dorimol differed so little from chloral that they were unable to state positively that it had any disadvantage over the same. Those conditions in which there existed an actual cardiac failure, either of an acute or chronic character, presented positive counter indications for the use of chloral. Trional, on account of its solubility, would be indicated instead of any of the above drugs in these conditions. Morphine, on account of its anti-spasmodic effect, was considered perhaps superior to either of the other groups of drugs. Chloral, when not considered counter indicated, was better than veronal, because it also modified reflex irritability, which is exaggerated by veronal. The advantage of isopral over hedonal was that it was more soluble, therefore quicker absorbed and easier to dispense.

THE CURE OF CONSUMPTION WITH SUBCUTANEOUS INJECTIONS OF OILS.—Keyes (*The Antiseptic*, Madras, India, Volume III, No. 12).—This article considers the hygienic treatment of tuberculosis aided by the production of fat in the body, by means of hypodermic injections of oil. The author accepts as a general principle that tuberculosis can be prevented and cured in certain stages by increasing the defensive powers of the body. This means of increasing the fat is also enhanced by a diet which will promote the deposition of fat in the body. The habit of not eating fats leads to non-digestion, mal-nutrition, and hence tuberculosis. The blood in tuberculosis showed proof that the body in this condition is in need of oil. Claims are made that adipose tissue protects the vitality of other tissues and thus enables them to throw off disease. This tissue is also the greatest supply of nutriment to diseased and famished tissues. The poor indigestion of phosphatic salts in fat starvation is cited as a proof for the special indication for fat in tuberculosis. Savages and other races who in earlier days lived largely upon fat were remarkably free from tuberculosis. The civilized races now living upon farinaceous food are fast succumbing to this disease. Experimental investigations upon the dog demonstrated that subcutaneous injections of butter pro-

duced an increase of fat in the tissues. Oil increased cell formation. Connective tissue which heals organized tubercular processes is said to be derived from the fat of the blood which is increased by this treatment. The author claims that the injections of oil meet all of the pathological conditions of tuberculosis. He gives his technique in detail and reports cases cured by this means. In order to make the cure positive he advises the continuation of the fat diet during the life of the patient.

THE USE OF PILOCARPIN FOR THE RELIEF OF PRURITIS, ESPECIALLY IN REGARD TO PRURITUS VULVAE.—Reid (*Medical Record*, May 25, 1907).—According to the author, pruritis is considered as a neurosis somewhat allied to neuralgia. Its similarity to neuralgia is due to the fact that it is periodic and may occur without any immediate cause. Holstern reported the use of pilocarpin for pruritus coincident with jaundice with favorable results. The author reports its use in pruritus from various causes with healthy effect. He began with 1-8 of a grain and gradually increases the dose if necessary. Combined with atropine (grain 1-120) it has been used effectively to prevent sweating.

A COMPARISON OF THE EFFECT OF ASPIRIN AND SODIUM SALICYLATE ON RHEUMATISM.—Roch, Geanneret and Alamuni (*Therapeutische Monatshefte*, May 1907).—These authors review the literature on this subject and give detailed reports on fifteen cases in which both sodium salicylate and aspirin were used. In these cases sodium salicylate was tried first without marked modification of the clinical course of the disease, after which aspirin treatment was instituted. Their practical conclusions are as follows: Sodium salicylate has a direct favorable action upon some cases of acute articular rheumatism. In some of their cases it seemed to have no positive effect. Four of the cases which were not affected by sodium salicylate immediately reacted to aspirin. Aspirin does not have the deleterious effect on the stomach or cause the early effects of salicylism produced by sodium salicylate. Nervous symptoms, such as headache, tinnitus, and delirium are less prevalent with aspirin treatment. Smaller doses of aspirin are required to produce the effect desired than sodium salicylate. They agree with Filippi and Nesti that these effects are produced by the slower and more constant absorption of salicylic acid from the aspirin than from sodium salicylate.

SURGERY.

IN CHARGE OF

MALVERN B. CLOPTON, M. D.

FUTURE RESULTS IN CANCER OF STOMACH.—Hoffmann (*Mitt. a. d. Grenzgeb. Med. u. Chir. Gedenkbund f. Mikulicz*).—Are we to expect better results in the future from the surgical treatment of stomach cancer, and is there a definite relation between the clinical duration of the disease and its operability? To decide these points the 655 cases in Mikulicz

clinic were studied. Many more men than women were observed (416 to 239), but the resected cases were about equally divided (87 men to 77 women). This is explained by the fact that enteroptosis and relaxed abdominal walls are most often observed in women, making the tumor evident to examination when still small, and these are the most favorable cases for the radical operation. Out of the 163 cases of resection of the pylorus 21 were free from recurrence after two years. In many cases it was possible definitely to establish the beginning of the trouble, in others not so easy until the operative findings were consulted. But in considering the facts it was shown that only 18 per cent of the cases consulted the clinic in the first 3 months of their illness, about 50 per cent in the first six months and only 83 per cent came to surgical treatment in the first year of their illness (an average of 10.3 months for all cases), a very late stage of the disease for satisfactory surgical care. About 4 per cent of the cases showed a tumor at the time of the first symptom. The great inadequacy of methods of stomach examination and the great danger of delay make it imperative that all doubtful cases be immediately sent by the general practitioner to a stomach specialist or to a surgeon. No doctor can say whether the tumor is or is not operable, and all doubtful cases should be given the advantage of an exploratory laparotomy. He shows that the average time from the appearance of the disease to the time of operation for cases whose pylorus was resected is 9.5 months, while the time of the non-radical operations was 11.2, a difference of 2 months in which the cases have passed over the stage of operability. The author concludes that we have little to expect from improved technique or improvement in the methods of stomach examination. The cases will seek a surgeon earlier only by a more thorough instruction of the general practitioner and the laity that salvation lies in seeking surgical aid early. There is a definite relationship between duration of the disease and its operability.

ON THE DIAGNOSIS OF TUMORS.—Richardson (*B. M. & S. J.*, March 7, 1907).—With especial reference to the evil results of over confidence and delay, Richardson has written a characteristic article, which cannot be abstracted, but excerpts from it will give the author's intent. He states that one may be positive of a diagnosis of malignancy but less so of benignancy, and as our only recourse for the cure of tumors is surgical (excepting, perhaps, the x-ray and Coley's toxins) we lose the golden opportunity by delay in what we consider benign growths.

"Positiveness varies with the evidence, for some is positive and some is not. It varies with the observer's experience for it is sometimes broad and sometimes limited. It varies with common sense, for some observers have this quality and some do not. Finally, positiveness based upon truth, and accurate observation is an attribute that can be cultivated to high perfection. * * * Preventable errors of all kinds in the practice of surgery, especially the gross and hard to excuse—whether of diagnosis, technique or after treatment—occur as the result of overconfidence rather than of ignorance. * * * In the diagnosis and treatment of tumors, the most desirable because the most beneficial proposition may be ex-

pressed I think, as follows: All tumors should be regarded as malignant until they are proved benign. No tumors can be proved benign while they are still in the body. Therefore all tumors should, if possible, be removed. * * * The breast tumor cannot at any age, and especially after the age of thirty, be diagnosticated as benign with an accuracy sufficient to permit indefinite delay. * * * There are worse evils than those of unnecessary operation, no matter what may, in a single case, happen. Of the real calamities of surgery, there is none greater in the aggregate than the palliative, let alone, or even half-hearted treatment of malignant disease. True, a small percentage of explorations prove unnecessary, a small number may show inadequate study, or prove careless deductions; a small number may increase suffering or cause death, and yet the sum total of good accomplished would be greater in carrying out a policy of universal and indiscriminate surgical intervention in the treatment of doubtful tumors, than in a policy of universal palliation. * * * The correct diagnosis of the great majority of pelvic tumors is comparatively easy. The correct diagnosis of some pelvic tumors is beyond human power. * * * Let the surgeon look upon every neoplasm, no matter how innocent it may appear, as a possible nidus of malignancy, and let him treat it on the principle that it is malignant until proved benign, and finally, let him, in his methods of extirpation, whatever his belief may be, act at least upon the theory that malignant disease is in the beginning a local affection."

SUBDELTOID BURSITIS.—Painter (*Bost. M. & S. J.*, March 21, 1907).—Four cases of operative removal of the bursa are reported with perfect functional results. The incision is made over the tip of the shoulder, the deltoid separated in the direction of the fibres and the bursa is usually easily located, if it is at all thickened, just beneath the sheath of the muscle. It is dissected out, the fibres of the muscle closed with catgut and the skin closed. This is the procedure recommended in cases of long standing. The results have been far better than with the manipulative method, the patient being relieved of all pain immediately, is able to use the arm in three weeks, a much shorter time than is possible for manipulated cases. The bursas were all filled, the contents varying from sebaceous-like material which contained much calcium salts, to clear fluid. In three cases the x-ray gave a shadow of the bursa.

LOCAL USE OF MAGNESIUM SULPHATE IN INFLAMMATION.—Tucker (*Thera. Gazette*, April 15, 1907).—A saturated solution of epsom salts is applied on 15 to 20 thicknesses of ordinary gauze, which is kept moist by frequently pouring the liquid on the compress without removing it. This is kept up for 24 hours when the skin is washed after the compress is removed. The skin is markedly blanched and there is a partial loss of sensation, which persists for several hours. With these applications relief has been obtained in epididimitis, acute rheumatism, gonorrheal joints, sprained joints, and in facial erysipelas the local pain was abated in a few hours. The suggestion for the external use came through the known anesthetic quality of magnesium sulphate when used hypodermically.

TRANSBRACHIAL ANASTOMOSIS FOR BRACHIAL PALSY.—Babcock (*J. A. M. A.*, May 25, 1907).—A case is reported of a child who at three and one-half years had anterior poliomyelitis, which involved the right arm and leg. The leg improved markedly and the paralysis disappeared. The arm and shoulder did not improve and at fifteen months were wasted and useless except a slight activity in some of the extensors and pronators of the forearm and only slight power of extension of the wrist, and pronation of the hand. As the condition was stationary the only relief was to come from surgical intervention. The muscles were either wanting or too weak to have their tendons transferred, and there were no active branches of the brachial plexus to transplant into the paralyzed ones. The spinal accessory was involved, leaving the hypoglossal as the only motor cranial nerve available and it was impossible to successfully transplant it into the defective plexus. Accordingly the anastomosis was made with portions of the opposite brachial plexus. The sixth nerve on the paralyzed side was split in half at its emergence and separated downward as far as the junction of the various nerve trunks. The sixth nerve on the well side was divided longitudinally into two parts beginning at the clavicle and was split upward for two inches. The free ends of the nerves were sutured end to end with chromic gut in front of the trachea. Three and one-half months later the improvement was far beyond expectation. Power of extension had increased in the fingers and partial flexion of the fingers and wrist had returned, shoulder drop had disappeared, the scapular, trapezius and pectorals have developed much. The deltoid and upper arm muscles still are paralyzed. The arm is used constantly. The opposite side shows no injury from the nerve interference.

THE TREATMENT OF DIFFUSE SUPPURATIVE PERITONITIS.—Blake (*Am. Jour. of Med. Sciences*, March, 1907).—The report is on 99 cases with a definite purulent exudate, extending throughout the greater part of the peritoneal cavity. 78 cases were due to appendicitis, 13 followed perforating gastric ulcer, 8 were from perforation in typhoid. The principles of the treatment were to rapidly remove the origin of the inflammation, to irrigate the peritoneal cavity, and not to drain the general peritoneal cavity. The desirability of washing the peritoneal cavity is disputed, but the chief objection to the author's mind is the additional time required. The double current irrigator is used with normal salt solution until all the septic material is removed, and by its use it is claimed that septic material is not diffused. Washing in this way accomplishes more quickly and effectually what the drainage of the cavity is intended to do. This washing is done through a small opening, which is later partially closed and a small drain inserted down to the peritoneum, unless deep drainage is indicated such as imperfect removal of the cause of peritonitis, necrotic material, or oozing. The patient is returned to bed in the Fowler position. Intermittent irrigation for forty minutes at a time, of the colon through a double rubber tube every three hours for two days, or a constant slow method by syphon is used. The stomach washed out, and no food given until peristalsis is established. Blake believes that the improvement in the results of treatment in this class of cases has been gen-

eral, and does not depend so much on whether lavage or general drainage has been employed as upon the increased rapidity of getting the patient off the table, the use of large quantities of fluid by bowel, rest for the gastro-intestinal tract, and possibly the Fowler position. Of the 78 cases of peritonitis, caused by appendicitis, death occurred in 15 (19.2 per cent mortality). Of these half were drained. Of those recovering, 31 were not drained, 28 were drained to the appendix stump and 4 drained to the pelvis. Of the 13 stomach ulcer ruptures 4 died (30.7 per cent), 3 of these perforating over 36 hours before admission. Of the death and recoveries half of them were drained to the suture line. The other half not, only one case being drained to the pelvis. Of the 8 typhoid cases 4 died (50 per cent), 3 were drained and one drained to the pelvis. Of the 4 recoveries, 2 were and 2 were not drained into the pelvis. The abdominal wounds were drained in all cases. The author's personal impression was that patients made a smoother recovery when not drained.

ORTHOPEDIC SURGERY.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

OPERATIVE PROCEDURE TO INCREASE FLEXIBILITY IN CASES OF LATERAL CURVATURE OF THE SPINE.—LeBreton (*Amer. Jour. Orth. Surg.*, April, 1907).—The author describes the following method of operative treatment to increase the flexibility of the spine in scoliotics. An incision is made over the deep spinal muscles in the apex, or angle, of the dorsal curve, where the resistance to passive motion is the greatest. A section of muscle about three inches long is then removed by cross-cuts exposing three ribs from their angles to their spinous processes. By blunt dissection, the pleura is freed from these ribs, and from each rib a section is removed, beginning at their angles, and extending to the transverse process of the vertebrae. These transverse processes are then cleared of muscular and ligamentous fibers by the knife, cutting the anterior costo-transverse ligaments. The wound is then closed and a corrective jacket applied. After a few days, another jacket is applied, producing further correction. This operation has for its object a partial restoration of flexibility of the spine. It would seem probable that operative measures for lateral curvature would find a limited field. The case best suited for operation would be a healthy girl about sixteen or eighteen years old, with a fairly marked curvature which shows rigidity and rotation in the dorsal region, not yielding to the ordinary treatment.

PLASTER OF PARIS, THE EFFECTS OF VARIOUS SUBSTANCES UPON ITS RATE OF SETTING, AND THE SUBSEQUENT STRENGTH AND DURABILITY OF THE CAST.—Stern (*Amer. Jour. Orth. Surg.*, April, 1907).—The author has made a very careful study of the effects of various substances on the rate of setting, and subsequent strength and durability of plaster of

paris dressings. Pure plaster of paris should be selected, that which is well made and well kept. Such plaster will set in about seven minutes, which is fast enough for ordinary work, and yields a cast of the highest strength and durability. The use of starched crinoline bandages as the support in the application of plaster does not interfere with its rate of setting or its strength. The various forms of wire gauge bandages yield a cast increased tensile strength and therefore a lighter cast. Portland cement, when used with plaster of paris in amounts varying from ten to twenty per cent., yields a cast of superior hardness, strength and durability. It is especially adapted for use about the foot, ankle and thigh. Moisture, disintegrates, softens and dissolves plaster casts. The waterproofing of plaster casts by placing the bandages in a solution of sodium silicate is impractical. The finished cast should be thoroughly coated with sodium silicate solution, after it has hardened. The hardening of plaster models, corsets, etc., can be accomplished by dipping them, or painting them with hot alum solution. The use of any substance to accelerate the set of plaster of paris results in a soft and pliable cast of insufficient strength. The use of quick-setting dental impression plaster is also condemned for the same reason. The regular, slow-setting dental plasters are pure and unadulterated, and when kept clean and dry make the ideal material for orthopedic casts. Such plaster can be wound into bandages with starch, crinoline or wire gauze, and when especially heavy wear is expected can be mixed with ten to twenty per cent. of Portland cement.

CHRONIC ARTICULAR RHEUMATISM AND ARTHRITIS DEFORMANS.—Hoffa (*Deut. Med. Woch.*, Vol. XXXIII, 1907, No. 14).—Basing his classification on a careful study of radiographs, and on analysis of histories and clinical signs, the author is prompted to divide the group of conditions recognized as rheumatoid arthritis, or arthritis deformans, into three types: (1) arthritis deformans, (2) poli-arthritis chronica progressiva primitiva, and (3) chronic articular rheumatism. Arthritis deformans affects the large joints. It has periods of activity and remission, and is unaccompanied by muscle atrophy. The author's radiographs show spurs as the earliest lesions, followed by baring of bones and the production of osteophytes. Characteristic of this form is the disappearance of bone and cartilage going hand in hand with new growth of bone and cartilage. Poli-arthritis chronica progressiva primitiva progresses steadily, attacking first the small joints, destroying the bones and producing muscle atrophy above and below the joints, resulting in deformity and displacement. Radiographs show marked atrophy of bone and disappearance of cartilage. The capsules of these joints, as shown by radiographs of joints distended with oxygen, are to a great extent obliterated. It is differentiated from arthritis deformans in that in this affection we have a primary disease of the skeletal portion of the joint, whereas in arthritis chronica progressiva, or arthritis destruens, we have a primary disease of the soft parts of the joint. Chronic articular rheumatism follows repeated attacks of acute rheumatism. He further divides these chronic joint conditions under two heads,—infectious and non-infectious.

The treatment of these conditions consists of applying supporting apparatus, mud-baths and massage.

A CASE OF CONGENITAL DEFORMITY OF THE WRIST.—Peckham (*Amer. Jour. of Orth. Surg.*, April, 1907).—The author describes a case in which the ulna extended backward, and the space which should have been occupied by the ulna was filled with thickened fibrous tissue. This was all dissected out and the parts restored to their normal condition, and firmly held by anteroposterior splints for about six weeks. Hot air baths and massage overcame the resulting stiffness.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON, M. D.

THE DIAGNOSIS OF DISEASES OF THE PROSTATE.—Ballenger (*Jour. Amer. Med. Assn.*, June 8, 1907).—After a consideration of the diagnostic points in the various diseases of the prostate, the author draws the following conclusions: the prostate gland is without doubt the cause of the majority of obscure urinary and sexual symptoms and should always be examined where there is any uncertainty as to their origin. Among the factors that tend to perpetuate a chronic or recurrent gonorrhea, a nidus of infection or irritation in the prostate is the most frequent cause. It is in this variety of prostatic inflammation that the largest number of errors are made in the diagnosis. Palpation, pus and proteid are the three things to rely on in reaching a conclusion as to the condition of the prostate. By palpation through the rectum, the gland, if diseased, may be found enlarged, nodular, irregular, boggy or apparently normal. Pus in the secretion expressed from the meatus or found in the urine or fluid voided after massage, when the urethra and bladder are excluded as possible sources, is positive proof that the prostate is inflamed. Proteid in the fluid passed after massage is equally as reliable as pus in the diagnosis of prostatitis.

THE CURE OF UNILATERAL RENAL HEMATURIA BY INJECTION OF ADRENALIN THROUGH A URETER CATHETER.—Young (*Jour. Am. Med. Assn.*, May 18, 1907).—An interesting case of persistent hematuria is reported, which was cured by the injection of adrenalin into the renal pelvis through a ureter catheter. It is interesting because of its supposed traumatic origin, an injury having been received ten days before the hematuria began. Pain was constantly present in the side injured, but the hemorrhage came from the opposite side. There was absence of any signs of nephritis, which is held to be generally present in such cases. The author concludes as follows: With the use of adrenalin to stop hemorrhage we may have a measure of considerable diagnostic and therapeutic value. If we can in this way cure cases of persistent hematuria, without definite renal disease, much will be gained and patients saved from the

ordeal of cutting operations. If only a temporary cessation of the hematuria can be procured in other cases, a chance will be afforded for a more careful study of the urine, and a comparison of the function of the kidneys, which may make renal diagnosis much more easy.

A CLINICAL LECTURE ON ABDOMINAL TUMORS ASSOCIATED WITH DISEASE OF THE TESTICLE.—Osler (*The Lancet*, May 25, 1907).—Not infrequently the diagnosis of an obscure affection of the abdomen is determined by an examination of the testicles. The nature of a peritonitis or of an abdominal tumor has been cleared up by finding a tuberculous orchitis, or in syphilis, gummata may occur at the same time in the liver and in the testicles. But it is more particularly in malignant disease of these organs that abdominal features are met with. Two very common events in connection with malignant disease of the testicle, the influence of trauma and the very rapid generalization, are well illustrated by a case cited. Following an injury, the tumor may appear in a few months, or years may elapse. It is well to bear in mind that the course may resemble an acute orchitis. The generalization is, in the majority of cases, through the lymphatics, and may take place very early. In the abdominal tumor, there are two groups of cases, first the tumor is a secondary involvement of the lymph glands, and in the other the tumor is primary involvement of the retained testis in a monorchid or a cryptorchid. The lymphatics of the testicles discharge very high up into the aortic lumbar glands. The secondary tumor is, therefore, above the level of the navel, and usually begins in the upper quadrant of the abdomen, on the side of the affected organ. It has all the characteristics of a deep-seated mass, which has sprung from the retroperitoneal glands. The solidity of its growth, its depth, the immobility the absence of an outline; conforming to the well-known shape of a renal or splenic tumor, and the impossibility of grasping it bimanually, which can be done in the majority of all new growths of the kidney, and the character of the throbbing impulse, which is so marked in these deep-seated lymphatic tumors in the neighborhood of the aorta—all these points favor the view of a large secondary mass involving the lymph glands, connected with the left testicle. Several cases are described which illustrate both forms of tumor.

THE DIAGNOSIS OF PYELONEPHRITIS.—Beer (*Jour. of Am. Med. Assn.*, June 8, 1907).—The author found in two cases of pyelonephritis, that, after the administration of methylene blue, stained pus-cells were found in the urine at irregular periods. In one case, the stained pus did not appear until several months after. He experimentally produced an ascending pyelonephritis in a dog. Methylene blue was administered for several days following the operation, and the kidney was removed two weeks later. This specimen, when fresh, showed very little pigmentation, but after treatment with oxidizing agents, even after fixation in alcohol, showed multiple grayish-blue pus foci throughout the organ. These areas lose their color if treated with reducing agents, and regain the same on subsequent oxidization. He summarizes his clinical and experimental data as follows:

1. There is no differential diagnostic sign between simple pyelitis and pyelonephritis.
 2. Pyuria from the upper urinary tract may be due to either of these conditions.
 3. By the use of the above described methylene blue test, it would seem that a differential diagnosis may be made.
 4. Methylene blue is deposited in the parenchymatous abscesses, and may be stored in these for years.
 5. A late discharge of methylene blue, bound to the pus, is indicative of the rupture of such parenchymatous abscesses into the pelvis of the kidney, and is consequently diagnostic of pyelonephritis.
-

THE ETIOLOGY AND DIAGNOSIS OF SPERMATOCELE WITH A REPORT OF THREE CASES.—Whitney (*Amer. Jour. of Urology*, May, 1907).—The diagnosis of these cysts before tapping is not easy. Those of small size must be differentiated from small inflammatory indurations of gonorrheal, tuberculous, or syphilitic origin. Rarely the tension of the fluid within the sac is so great that we must consider the solid tumors of the testis, sarcoma, and carcinoma. Usually in those of large size the chief difficulty is in distinguishing them from hydrocele hematocele and chylocele. An important diagnostic point is the presence of the testis below and in front of the swelling, a point which should be kept in mind when tapping. When hydrocele and spermatocele exist together on the same side, the testis is between the two swellings. By withdrawal of the fluid, the diagnosis between these diseases is quickly made. As a rule, these spermatocysts do not present the pear-shaped outline of a hydrocele, and their light transmission is less. When small, they move readily with the testis. With rare exceptions, the fluid is of a milky character, often opalescent, and on standing settles gradually into two layers, the lower of which is white and contains many spermatozoa, while the upper is much clearer. Microscopically, this sediment shows great numbers of spermatozoa and a few lymphocytes and epithelial cells. Chemically, this fluid is characterized by a relative absence of albumen, which is in marked contrast to hydrocele fluid. The prognosis is good so far as life is concerned, as they are quite benign, but the integrity of the testis may be endangered from their presence. The treatment is either by operation, the cyst being dissected out, or by tapping and injecting of one to two drachms of tincture of iodine.

HEMATURIA DUE TO PATHOLOGICAL CONDITIONS OF THE BLADDER.—Ware (*Amer. Jour. of Urology*, May, 1907).—The author, in considering the subject, divides hematuria into painless and painful varieties; the former, when void of any other symptom, is peculiar to new growths, all the more so if the hemorrhage is sudden, profuse and non-provocative. The hematuria may be entirely disproportionate to the size of the growth, and traumatism may bring on the hematuria in benign and malignant growths. Hematuria, when associated with pain, may be significant of any pathological condition of the bladder. It is therefore desirable to keep in mind the age of the patient. In infants, we are most likely to

encounter stone; in youth, inflammations of the bladder, dependant on infections; in middle life, new growths added to the aforesaid; and in old age, enlarged prostate and stone. The character of the hematuria sheds some light as to the diagnosis. Thus, hematuria of sudden appearance, its equally sudden cessation, unprovoked by any violence or traumatism, its reappearance, and each time of a bright red color, speaks for neoplasm. The hematuria of vesical tuberculosis and vesical calculi have much in common. The hemorrhage is terminal, bright red and associated with great pain. The frequency of micturition is incessant in vesical tuberculosis by day and night; in vesical calculi, the frequency is not so great in the recumbent posture, and the hematuria in vesical calculus more readily sets in after exercise. In conclusion he notes that there is nothing pathognomonic in the various hematurias due to pathological conditions of the bladder, which distinguishes them from each other or differentiates them from renal hematurias that can be singled out by any other mode than the cystoscope. There is, therefore, all the more justification to adhere to the academic distinction of painful and painless hematuria, and the hematuria in relation to age and its bearing on urinary disturbances.

OBSTETRICS AND GYNECOLOGY.

IN CHARGE OF

HUGO EHRENFEST, M. D.

LAPAROTOMY FOR THE CURE OF IRREDUCIBLE INCARCERATED RETROFLEXION OF THE PREGNANT UTERUS.—Pestalozza (*La Ginecologia rev. Jl. of Obst. of Brit. Emp.* June 1907).—The writer discusses 31 recorded cases in which the abdomen has been opened to correct a retroflexion of the gravid uterus, and gives the account of a case of his own. A primigravida, aged 31, was admitted to the hospital complaining of difficulty in micturition of four weeks' standing. Her last menstruation 13 weeks ago. After four liters (130 ounces) of urine had been drawn off by catheter it was found that she was about three months pregnant, and that the uterus was retroflexed. On the right side of the lower part of the abdomen was felt a resistance which did not seem to be due to the uterus. In spite of frequent catheterization, postural treatments and attempts at reposition by pushing up the fundus and pulling on the cervix, the uterus remained retroflexed, and as pus had appeared in the urine, Pestalozza opened the abdomen. He found a small suppurating ovarian cyst on the right side, adherent to the fallopian tube and very firmly attached to the omentum. This was removed and the hand, placed into the hollow of the sacrum, lifted the uterine fundus. The patient recovered and pregnancy progressed undisturbed.

VAGINAL CESARIAN SECTION IN CASES OF ECLAMPSIA, PLACENTA PREVIA AND CERVICAL CARCINOMA.—O. Buettner (*Hegar's Beitr. zur Geb. und Gynaek.* Bd. XI. H. 3).—The writer records the histories of

seven vaginal Cæsarian sections. In five cases the indication for the operation was given by eclamptic convulsions, four of the patients recovered. The operation was performed after the 13th, 5th, 10th, and 7th attack respectively. In the one unsuccessful instance 5 convulsions preceded and 16 followed the operation. Two other successful operations were performed on a case of placenta previa and on a patient in the eighth month of pregnancy suffering from a cervical carcinoma.

CHORION-EPITHELIOMA WITHOUT A PRIMARY GROWTH IN THE UTERUS.—Walthard (*Zeitschr. f. Geb. und Gyn.* Bd. 59. H. 3).—The author describes in this paper a most unusual and very interesting case of chorion-epithelioma. During the second half of an apparently normal pregnancy with a live child typical chorion-epithelioma was found in the vagina, kidneys, liver and lungs without a trace of this malignant growth either in the placenta or that part of the uterine wall where the placenta was inserted. Since the organs were examined in serial sections and thus the absence of a primary growth positively established, this case proves the possibility of a chorion-epithelioma developing from a perfectly normal chorion epithelium or syncytium, in the absence of a vesicular or any other degeneration of the chorionic villi.

SUPRAVAGINAL HYSTERECTOMY IN A CASE OF ADHERENT PLACENTA.—Santucci (*La Ginecologia rev. Il. of Obst. Brit. Emp.*, June 1907).—The patient, 36 years old, had six full term pregnancies within ten years. In the first two labors the spontaneous delivery of the placenta was followed by an atonic hemorrhage. In the third labor there was some trouble in the third stage. In the fourth labor a severe hemorrhage immediately followed the expulsion of the child. Placenta had to be removed manually and the hemorrhage was finally stopped by packing of the uterus. The patient made a recovery eventually, after a suppurating parametritis. In the fifth labor the third stage was difficult, and there was severe bleeding again. For the sixth labor the patient was admitted to the hospital. Two hours after expulsion of the child, a severe hemorrhage occurred. An attempt at separation of the placenta by a hand inside of the uterus was unsuccessful, it being impossible to remove the placenta without removing portions of the uterine musculature. The patient's condition becoming very grave from the loss of blood, it was decided to perform an abdominal hysterectomy. This was done without an anesthetic, after the uterus had been packed, the stump being ligatured and fastened to the abdominal wall. Recovery was complete and uninterrupted. It was found that it was impossible to remove the placenta without laceration of the uterine wall. Bauereisen considers vaginal hysterectomy the preferable procedure in cases of unusually firm adherence of the placenta. Santucci defends his own method of treatment with the following arguments: In cases of severe hemorrhage it is necessary to plug the uterus before removal; therefore, in such a case vaginal removal would be impossible. Abdominal hysterectomy with elastic ligature of the stump can be performed more rapidly than vaginal hysterectomy. The latter operation with the field obscured by blood must be more difficult. By abdominal hysterectomy

secondary hemorrhage can be prevented with certainty, while its occurrence after vaginal hysterectomy must be possible when the circulation recovers from the collapse and shock.

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

EPILEPSY IN CHILDHOOD.—Keeling (*Brit. Jour. Chil. Dis.*, April, 1907) considers epilepsy in childhood as related to other diseases in the following aspects: Pathological, etiological, familial, symptomatic. His study was based on an analysis of 150 cases and his conclusions are as follows:

The pathology of epilepsy appears to resemble in some respects that of cerebral diplegia, chorea, paralysis agitans, neurasthenia, myoclonus and migraine.

Etiologically, rickets is an important factor in the causation of epilepsy.

A variety of epilepsy, which may be termed toxic epilepsy, is chiefly gastro-intestinal in origin.

Reflex epilepsy is apparently rare; peripheral irritation probably plays a very small part in the production of the fits.

The effect of measles on epilepsy is uncertain.

Chorea is very rarely found associated with epilepsy.

Infantile paralyses, especially the congenital forms, are closely related to epilepsy.

An injury or a fright is frequently the exciting cause of a fit. Instrumental delivery may be followed by paresis with subsequent epilepsy.

Enuresis is an occasional sequela of epilepsy.

The disease known as "night terrors" is probably a mild form of epilepsy.

The three affections most frequently found in the family history of epileptics are epilepsy, migraine and alcoholism.

Migraine appears to be very closely allied to epilepsy, both in the family history and symptomatically.

The differential diagnosis between Meniere's disease and epilepsy is occasionally difficult.

THE REDUCING POWER OF URINE FOLLOWING THE ADMINISTRATION OF UROTROPIN.—Abt (*Arch of Ped.*, April, 1907) has made a series of examinations of the urine of children with various conditions for which urotropin was given. He finds: (1) The administration of urotropin will cause the urine to reduce copper solutions after the drug has been administered for some time. (2) Urotropin does not ordinarily cause the reduction of the bismuth test solutions. Such urine has no action on polarized light; it does not show a fermentation test. (3) The continued use of urotropin may give rise to albuminuria, with the presence of blood and casts. (4) Nephritis prevents the reduction of Haines' solu-

tion by diminishing the permeability of the kidneys for urotropin. (5) A patient with normal kidneys secreting acid will eliminate urotropin very rapidly, and this can be demonstrated by the reducing action of the urine on copper solution.

ENTERITIS AND APPENDICITIS IN CHILDHOOD.—Comby (*Arch de Med. des Enf*, April, 1907) as the result of his study of this relationship, which, particularly in the French literature, has attracted a good deal of attention of late, comes to the following conclusions:

(1) There is a direct causal relation in childhood between enteritis and appendicitis.

(2) Among the forms of enteritis, that form which causes appendicitis the most often is the muco-membranous entero-colitis. This is the more easily explained in that the appendix is not really an adnexa but rather a prolongation of the colon.

(3) Identity of structure also explains the pathological relationship of the appendix and the colon. In muco-membranous enteritis, which might also be called follicular enteritis, the inflammation involves the lymphoid and tissue of the large bowel. Involvement of the lymphoid tissue of the appendix can therefore easily occur.

(4) In children it will be noticed that entero-colitis and appendicitis are often preceded by attacks of rhino-pharyngitis and by adenoids, and these affections may mark an early stage of intestinal and appendicular infection.

(5) Appendicitis in childhood is essentially a chronic disease, often unrecognized, healing spontaneously in the majority of cases. This disease is very frequently a sequela, or a special localization of infectious processes of the digestive tube.

(6) If we wish to prevent appendicitis, children should be put under a judicious alimentary regimen so as to avoid enteritis. Enteritis, when it does occur should be carefully looked after. Finally, rhino-pharyngitis and adenoids should not be neglected, inasmuch as they often are the prelude to digestive disturbances and appendicitis.

INFANTILE GASTRO-ENTERITIS WITH SPECIAL REFERENCE TO THE RETURN TO THE NORMAL DIET AFTER THE ACUTE ATTACK.—Boischut (*These de Paris*, 1907) says that every case of acute gastro-enteritis ought to be treated by a strict water diet for from twelve to forty-eight hours. In breast-fed infants the mother's milk is almost always well tolerated after this period, but in the majority of cases of artificially-fed infants, milk digestion is not good and it is necessary to give the child a carbohydrate regimen so as not to fatigue the intestinal tract and produce intestinal fermentation. Therefore for a short period, vegetable broths should be given, after which milk is ordinarily well tolerated. Sometimes this regimen is not sufficient because vegetable broths are not sufficiently nourishing and the infant needs nitrogenous food. In these cases, excellent results are achieved by the use of buttermilk and malt diastase foods. Their food value is near that of milk; infants take them very easily and their use may be continued for a long time. The general condition of these in-

fants after the use of these foods is quickly improved and in many cases they rapidly bring about a return to the normal.

RELAPSING CHOREA IN CHILDHOOD.—Lazzaret, (*These de Lyon*, 1906) in 140 cases of chorea, saw relapses in 39. Sometimes there were two, three or four relapses in a case. One case had twelve. These relapses were produced under the same influences which provoked the original attack,—fright, trauma, an attack of rheumatism, a fresh eczema, scabies. Sometimes no definite cause could be assigned. It does not seem possible to say, in a given case, whether or not relapses will occur. On the other hand, in the relapse, the choreic movements usually have preference for their original localization and it may even be said that if the original chorea is generalized, the relapse will also be generalized. So far as prognosis is concerned, the occurrence of a relapse is of bad import for the future, because the choreic patient shows the taint of the nervous system, particularly where there are several attacks during later childhood.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

THE HUGHLINGS JACKSON NUMBER OF BRAIN (*Brain*, Part cxvi, 1906). —A volume of *Brain* dedicated to the great neurologist Hughlings Jackson on the occasion of the completion of his fiftieth year as a practitioner of medicine, has just made its appearance. It is a notable example of the most progressive neurological thought and deserves mention for the reason that it represents a more than usual attempt on the part of well-known scientists to offer some adequate solution of the more common problems of neurology. Among the contributors are Jackson himself, Victor Horsley, Sherrington, Edinger, Batten, Buzzard, Holmes, Wilson and Head. The paper selected for abstract in this department is written by Head. This one is chosen over the others because it represents that unusual combination of clinical material used to elucidate a profound physiological problem. The fact that Head is above all a clinician and that all his views are founded upon absolutely accurate clinical data give to anything he writes a value that is almost unique in the neurological literature. Some time ago there appeared in *Brain*, from his pen, a piece of research work on the analysis of the sensory function based upon clinical data and upon experiments made upon himself. The theory so advanced has in a measure revolutionized our previous conception of the sensory system and though it naturally has attracted criticism it has not suffered to any extent from it for the reason that the observations that formed his basis are there for any one to prove or disprove. The present paper called "The Grouping of Afferent Impulses Within the Cord" is of much the same pattern and considers as its foundation the theory previously advanced. A paper of so great an extent and so full of clinical observations is difficult naturally to

abstract but the effort will be made to give some kind of an idea of the results of so patient a series of observations so that in a measure at any rate a notable piece of work may reach a wider circle of readers. The basis of Head's investigations arises from the fact that there is a much more complicated scheme of sensory conduction both in the cord and in the peripheral nerves than would seem at first sight necessary. It would seem reasonable, he says, to suppose that the mechanism of sensation was arranged in such a way, that, from the skin to the sensorium there was one system of end organs, fibres and cells for each sensory quality appreciable by man. On this supposition every application of heat to the skin would cause a disturbance in the activity of a special set of end organs which reacts to this form of stimulation only. Recent work has shown that the arrangement is not as simple as this. Head and Sherrin have found that the mechanism of conduction at the peripheral level is formed of three systems, each of which is capable of demonstration. These three systems are: 1. A system corresponding to the group of impulses called deep sensibility. The end organs of this system respond to the stimulus of pressure to the movement of joints, tendons and muscles. 2. The protopathic system capable of responding to painful cutaneous stimuli and to the more extreme degrees of heat and cold. 3. The epicritic system. To the impulses of this system we owe the power of cutaneous localization of discriminating two points and of recognizing the finer grades of temperature called cool and warm. In the present paper the authors are concerned with the grouping of sensory impulses in the spinal cord, rather than with the position of the tracts by which they pass to the higher centers. They plan to demonstrate not only that a change takes place in the grouping of the afferent impulses, but also to show at what point this transformation takes place. Seventeen cases form the clinical basis of this investigation some of them observed for long periods of time, in some instances more than five years. The method of study used in these cases is a model of careful objective inquiry by which the personal factor on the part of the examiner and the patient is removed as far as possible. In any case in which there was the least doubt in the matter of the facts obtained, the series was omitted from the reports. Tests of sensation were made only after the technique was refined to the utmost limit and until all possible sources of error were understood and when possible, removed. The tests were conducted in such a way that the patient was never allowed to become tired and on each examination the patient was prepared to show the most accurate responses possible. Conditions never before thought of as influencing sensory stimulation were taken into consideration such as the weather, fatigue, condition of skin, bowels, bladder, etc. These are mentioned in order to show that sensory data derived from examinations conducted with less care are open to serious objection as not approaching the standard set up by this research. A most careful study of the lack of refinement in the instruments used to determine defects in sensory response led to the discovery of instruments of a greater precision or at least to the means of counteracting the lack of precision in the means used. It is impossible to more than outline the method of the research and the reader who is interested must go to the

original. Attention might be called to the clinical reports of cases included in this paper. They are models of English clinical reporting and they form a valuable contribution in themselves. The following conclusions are advanced by the writers:

We believe that the spinal cord is the seat of the transmutation of most of the impulses of the peripheral into those of the secondary level, of the afferent nervous system. This transmutation and recombination takes place on the same side as that by which the impulses enter the cord. The secondary paths for sensory impulses then cross with greater or less rapidity, so that ultimately all except those subserving the sense of passive position and movement and tactile discrimination have passed to the opposite side within the limits of the spinal cord. Even these sensory impulses cross after reaching the nuclei of the posterior columns. At the same time within the spinal cord afferent impulses become separated into sensory and nonsensory. Of the latter many pass up into the secondary system of the direct cerebellar tract to reach the cerebellum. Thus the mechanisms of the secondary or intramedullary level are concerned with the separation of non-sensory from sensory afferent impulses and with the recombination and transmutation of sensory impulses into specific groups. Of this piece of work it can be said as was said of the previous research alluded to in this paper that it has added not merely a page, but an entirely new chapter to the science of neurology.

MYASTHENIA GRAVIS.—Borgherini (*Neurologisches Centralblatt*, No. 10, 1907).—The author has had the opportunity of studying three cases of myasthenia gravis but as he was not able to obtain autopsies he made an effort to study the muscular changes in specimens removed by biopsy. He assumes with Buzzard and some of the other recent investigators in the pathology of this disease that there is something that is pathologically characteristic in the changes found in the muscular substance in the cases that have been microscopically studied. By means of a specially devised technique, both in regard to the method of hardening the specimens and in the method of staining them, the author came to the following conclusions: By the use of this method very subtle changes in the muscle substance have been found. The plasmodial degeneration is the most significant of these changes. A certain relationship exists between progressive muscular dystrophy and myasthenia. This is grounded on the presence of similar anatomical changes and on the occurrence of both conditions in the same individual. The peculiar electrical reaction depends not only upon the increase in the nuclei of the muscles but likewise in the existence of certain chemical substances which are the product of the cell activity in the diseased muscles.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

The papers abstracted below were read before the Section on Ophthalmology of the American Medical Association, June, 1907.

IMMEDIATE AFTER-TREATMENT OF CASES OPERATED ON FOR CATARACT (WITH BANDAGE).—W. H. Wilder.—The after treatment should be started before the operation and should include a thorough bath, shampoo of the head, cleansing of the face and field of operation, a cathartic the night before and an enema the morning of the operation. Morphine, gr. $\frac{1}{4}$, together with atropine, gr. 1-120, is administered hypodermically to all patients who are excitable or in great dread of the operation. Immediately after the operation the closed lids are covered with a couple of layers of thin gauze moistened with boric acid solution; on this the pads of absorbent cotton are so arranged as to insure equal pressure and the bandage applied as a figure of eight over the eyes and around the head. The bandage is made of a fairly good quality of mosquito netting cut into strips about 3 inches wide and 4 to 5 yards long, rolled, and then sterilized with dry heat. Just before use it is moistened and applied as a starch bandage. There is just enough sizing in the fabric to make the layers adhere when it dries. The edges on the cheeks, nose and forehead may be stuck down with collodion. The patient is carried on a stretcher to bed. If he shows any inclination to carry his hands to his face, the hands are tied to the sides of the bed. The dressings are changed the following day and daily thereafter. The edges of the lids are gently wiped with pledgets of cotton moistened with boric acid solution and a drop of 1 per cent atropine instilled. Irrigation is not practiced. Both eyes are bandaged and the protective shield replaced.

At the end of the fourth day the unoperated eye is left uncovered and the patient allowed to sit up. A laxative or enema is given. At the end of the fifth day the bandage is left off entirely and the eye simply covered with a dark shield. At the end of ten days the patient is allowed to expose the eye from time to time to the light.

Post-operative mania calls for sedatives or hypnotics. These failing, the unoperated eye should be uncovered. Cough due to pharyngeal or laryngeal irritation may be helped by sprays, sipping ice water or eating shaved ice. Bronchial cough may be controlled by heroin, codein or morphine.

A prolapsed iris, if recent, may be replaced, but usually it will have to be excised. In the latter event care must be taken to free the iris at the angles of the wound so that when the prolapsed portion is excised the rest will draw back into the anterior chamber.

Hemorrhage into the anterior chamber or vitreous calls for the administration of arterial sedatives, as nitroglycerin, measures to promote the flow of blood to the extremities and leeches to the temple. Pilocarpine, sweat, dionin and hot applications will help to promote the absorption of blood.

At the first sign of infection a brisk cathartic with calomel should be given. To improve the general tone and increase the vital resistance quinine, strychnia, and whiskey are indicated. The eye should be irrigated every few hours with boric acid solution, or bichloride of mercury solution 1-6000. Particular attention should be paid to the condition of the lachrymal sack. Subconjunctival injections of physiological salt or cyanid of mercury 1-1000 are occasionally useful adjuvants. Hot applications continued for 15 to 20 minutes should be applied three times a day.

For severe plastic iritis Wilder strongly endorses Gifford's plan of giving salicylate of soda in 20 grain doses every three hours. In addition active elimination by diuretics and cathartics and pilocarpin sweats may be useful. Local treatment should consist of hot applications, dionin and subconjunctival injections of salt solution.

Vitreous opacities, the sequelae of such an inflammatory attack, yield best to the administration of syrup of hydriodic acid in one drachm doses three times a day.

CONCERNING THE LOSS OF VITREOUS HUMOR IN THE OPERATION FOR EXTRACTION OF CATARACT: ITS IMMEDIATE AND REMOTE RESULTS.—J. M. Ray.—A careful review of the subject leads Ray to the following conclusions: 1. Loss of vitreous at the time of the extraction adds to the danger of primary infection, this danger being irrespective of the quantity of vitreous lost, but depending largely on the care used in the preparation of the field of operation. 2. The danger of iridocyclitis during the stage of healing is materially increased by loss of vitreous. The increased activity in the blood vessels and lymphatics during the repair of the traumatism necessary to the operation for cataract being overtaxed excites changes in the iris and ciliary body that end in a hyalitis with closure of the pupillary space and anterior phthisis. 3. When the vitreous is once lost the material taking its place is probably aqueous, the framework is never reformed, and the vitreous becomes fluid throughout. Floating particles increase in amount as time goes by. Fibrillary bands are thrown out from the retina to take the place of the reticulum of the vitreous. These bands contract, causing minus tension and retinal detachments, followed by the characteristic squared atrophied eye due to the action of the recti muscles on the softened globe.

OPERATIONS FOR SECONDARY CATARACT.—P. A. Callan.—The author's conclusions are, in part, as follows: Secondary membranes, consisting of capsule, gauze-like in texture, readily yield to a dissection performed with the knife needle under artificial illumination.

Thin secondary membranes consisting of one or more bands require different handling. Simply avoiding these bands in performing a dissection with the knife needle is a conservative course that gives a good visual result followed, however, in some cases by subsequent disaster, due to the traction of the bands on the ciliary processes. Tough resilient bands can be disposed of successfully by the expert use of the thin Graefe knife in one operation by cutting at a right angle to their long axes.

Thick, dense secondary membranes within the area of a fairly large pupil can be disposed of by the use of a Graefe knife in two operations.

The employment of Bowman's two-needle operation for dense, opaque membranes covering a fairly large operation field is deprecated.

For all forms of secondary cataract other than the thin diaphanous membranes the forceps scissors (De Wecker) affords the safest and most reliable of all instruments. In all complicated forms of secondary cataract, occluded pupil, incarceration or prolapse of iris it is the only instrument of which a proper use combines a minimum of risk with a maximum of benefit.

Do not tear secondary cataracts. Always cut them.

Disasters following secondary operations are in the main due to tearing methods in operating. The least danger is from infection.

LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OF

W. E. SAUER, M. D.

THE ETIOLOGY AND RECENT TREATMENT OF HAY FEVER.—Curtis (*Presented before the Section on Laryngology and Otology of the Amer. Med. Assn.*, Atlantic City, June 4-7, 1907).—The author states that the factors which enter into the causation of hay fever are: First, a nervous element which is responsible for the cases that come on spontaneously with sneezing and lachrymation, irrespective of the season; second, pathological changes in the nasal mucous membrane, polypi, deflection, hypertrophies, synechiae, etc.; third, an exciting constitutional dyscrasia, such as a lithaemic or uric acid dyscrasia, gout, rheumatism, obesity, etc., and fourth, some adventitious irritant, as dust, pollens or animal emanations.

In regard to treatment, the author begins by stating that the personal element, viz., suggestion, enters largely into the result of treatment. Adrenalin chloride in various strengths, used as a spray or taken internally, combined with proper constitutional treatment, and the correction of pathological conditions in the nose, seems to be the most satisfactory method of treatment. The most recent treatment consists in the administration of the Dunbar antitoxic serum, which has given satisfactory results in some cases, but has been absolutely worthless in others. The author does not consider the Dunbar antitoxin a specific and in order to obtain the consensus of opinion concerning it he wrote to 300 specialists: the great majority of those responding considered it unsatisfactory without the removal of spurs, ridges, etc.

The author concludes as follows: 1. Hay fever is a disorder amenable to no specific treatment. 2. The number of cases of hyperesthetic rhinitis from other causes than rag weed and other pollens is about one-third of the total number. 3. About one-third of the cases supposed to be due to pollen reaction may be relieved by constitutional and surgical methods of treatment. Predisposition to attack in these cases being due

to definite causes, would suggest the theory that induced enervation of the sympathetic was an important etiologic factor. 4. Primary intoxications may take place from pollen toxins in cases where the sympathetic system apparently is not previously enervated. These cases, theoretically, should react to anti-toxin treatment. 5. The consensus of opinion to-day is against the claim made for pollantin, though observers who have been instructed personally by Professor Dunbar, indorse unqualifiedly the great benefit to be derived from the treatment. 6. Medically the suprarenal capsule products hold the first place to-day in the treatment of hyperesthetic rhinitis. 7. The importance of constitutional treatment as an adjunct to any local application is of supreme importance. 8. The best of all treatments yet found is the climatic, with previous attention to nasal conditions.

CAUTERIZATION OF THE FOUR SUSCEPTIBLE AREAS OF THE NASAL MUCOSA.—Prof. Gustav Killian (*Laryngoscope*, May, 1907).—According to the author, hypersensitiveness of the nasal mucosa is produced in vaso-motor rhinitis by prolonged irritation brought about by changing conditions in the seasons of the year, habits and occupation. This hyperesthesia is confined to four principal points in the nasal mucosa; two in either naris, one being lateral and the other medial. The lateral point lies slightly above the region of the anterior end of the middle turbinate; the medial is felt on the upper part of the septum about the tubercle and by probing one can easily prove that just these two spots exhibit the greatest sensitiveness. Patients designate these spots with the greatest precision and call the physicians' attention to them. These sensitive spots are located in the region of the ethmoidal nerve and the hyperesthesia of the nerve-ends results in an accentuation of the normal reflexes, tickling and tendency to sneeze, and increased secretion, because of the extension of the irritation.

The author states that the treatment is two-fold; first, local treatment which consists in the removal of causes which excite hyperesthesia of the mucosa and elimination of reflexes, and secondly, general treatment when the nervous system is to be considered.

Elimination of the reflexes is best accomplished by cauterizing the four sensitive areas with trichloracetic acid after cocainization. On each of these four areas a cauterized surface of less than one-half inch in diameter suffices. The result is sometimes permanent, but even when only temporary it may extend over an entire hay fever season.

The general treatment and prophylaxis sometimes accomplishes little, but mechanical interference in conditions of deflected septum, polypi, etc., will bring about best results.

DERMATOLOGY AND SYPHILIS.

IN CHARGE OF

M. F. ENGMAN, M. D.

THE ACCUMULATIVE EXPERIENCE OF THE PROFESSION IN THE USE OF ROENTGEN RAYS IN THE TREATMENT OF ACNE, ACNE ROSACEA, ECZEMA

AND PSORIASIS.—Biddle (*Am. Quarterly of Roentgenology*, Vol. I., No. 1).—This article of Dr. Biddle is a valuable contribution, as it encompasses the experience of opinions of some of the leading radiographers in this country and Europe.

The author sent a circular letter asking opinions and the results of experiences in the treatment of severe cutaneous diseases, especially acne, eczema and psoriasis.

The conclusions drawn from this inquiry are as follows:

I feel justified in presenting the following conclusions, which I trust will be ratified or modified to meet the views of the members, that the result may be an authoritative expression:

Time, a decade, through the experience of a large number of competent observers has given to Roentgen rays a valuable and by reason of improved methods for the measure of dosage and perfection of machinery and technique, an ever-increasing usefulness as a therapeutic agent in the local treatment of acne, acne rosacea, eczema and psoriasis. Conservatively used, with due regard to their well-recognized dangers, especially in these non-malignant dermatoses, a knowledge of their efficiency and limitations and with proper technique, they are useful in selected cases, not as a routine nor as the only treatment, but as an addition to our other remedies, especially in those cases which have resisted ordinary treatment and in which there is a marked infiltration of the tissues.

Acne.—While x-ray therapy is applied by a few to all types of acne, it finds its greatest usefulness in the rebellious indurated, deep-seated, sluggish, staphylococcic pustular type, which have resisted all other measures. As a routine treatment the dangers to the face to exposure even with the best of technique outweighs its advantages over other tried measures. In every case the exposures should be given with caution; they should be mild and of short duration. The rays seem to exercise their greatest influence in those with coarse seborrhoeal and pale, pasty skins with a natural predisposition to acne and comedones.

Although the experience of operators seems to vary greatly as to the time necessary to effect a cure, it would seem that the more permanent results are obtained in those cases in which the exposures are given in cycles. The preponderance of opinion is to the effect that, though the time for effecting a cure is not materially lessened, cases otherwise incurable are much benefitted and relapses are less frequent.

In *Acne Rosacea* the results are not brilliant. The influence is greatest in those conditions in which the glandular inflammation predominates. The effect on the dilated blood vessels and upon the tumefaction of the nose is not appreciable. The treatment must be prolonged, though in those cases in which improvement is noticed, it seems to be shortened in comparison with other methods.

The same caution must be observed as in the cases of acne.

Eczema.—The chronic, infiltrated patch, found as a type in eczema of the hands and of the feet, will often yield to x-ray therapy, when it has resisted with a dogged persistence all other remedies. In selected cases

of subacute inflammation it may be found useful, but it should never be applied to the acute stages of the disease except in cases of unusually severe and protracted pruritus, to the eczema of childhood, except in the most obstinate cases, or to an eczema otherwise easily managed. Some brilliant results are reported and it would seem that the duration of treatment is shortened, but recurrences are frequent.

Psoriasis.—To the persistent, large infiltrated plaque or to the aggregation of smaller lesions which nothing else seems to affect with any degree of permanency, is radiotherapy applicable with the assurance of good results. The treatment must be prolonged and relapses are not infrequent. Reports are received of the successful treatment of psoriasis but on the whole, except in a few isolated cases, which have yielded quickly and apparently permanently to the influence of the rays, the story is one of repeated disappointment.

The claims of the early enthusiast have not been realized and such early claims seldom are. But in the hands of the competent operator, with the present more accurate means of measuring the dosage, and the gradual improvement in technique, x-ray therapy in general is finding its level and within its limitations the results are more certain and permanent. Were the dermatologist more expert with the machine and did he give it his personal attention instead of relying upon the uncertainty of an assistant, and were the radiotherapist a better diagnostician of the dermatological lesion, more uniform results would probably be reported. The causes of failure with the one lies in his ignorance of his agency, and his improper technique; with the other, in his inability to recognize the true character of the lesion and its interdependence upon other constitutional conditions.

Ignorance, faulty judgment and inexperience of the operator (defective technique), over confidence and rashness or timidity in its use, (for I believe with the history of past mishaps as their precedent, more men under than over expose), have done much to belittle the value of x-ray therapy. To this may be added as causes of failure, defect of machinery, uncertainty of reaction in the individual skin, inability of the operator from one cause or another to select cases appropriate for treatment, time and expense necessary to a successful outcome and uncertainty of results.

The dangers, namely, permanent telangiectasis, warty growths, burns, atrophy or increased and permanent pigmentation of the skin, growth of downy hairs, etc., should always be kept in mind. Fortunately the burn is of less frequent occurrence, but the dilated blood vessels, the atrophy, may not present themselves for several months after the exposures have been discontinued, even where the exposures have been mild and have produced little or no inflammatory reaction. (Hyde and Montgomery). And so we find that x-ray therapy is contraindicated in all types of acute inflammation or during acute exacerbation of a chronic condition and in childhood, when the skin is too delicate and dangers are too serious, except as a dernier resort.

The most successful practitioner will be he who combines an extensive clinical experience with a thorough knowledge of the principles and prac-

tice of Roentgenology; he who, never neglecting an opportunity to improve his knowledge of the one, keeps himself abreast the advances of the other.

MEDICAL LAW AND MEDICAL JURISPRUDENCE.

IN CHARGE OF

IRVIN V. BARTH, LL. B.

MALPRACTICE: DEGREE OF CARE REQUIRED.—Davis vs. Warford (*Court of Appeals of Kentucky, 1907*) 100 S. W. 312.—Action to recover damages for the alleged unskillful and negligent treatment of plaintiff's broken arm. Upon the facts in evidence the trial court instructed as follows concerning the degree of care exacted by the law:

"(2) The Court instructs the jury that negligence is the want of ordinary care; that ordinary care as applied to this case is that degree of care that physicians and surgeons would ordinarily use in the practice of their profession of medicine and surgery—that is to say, their best skill and ability. The skill required by law in a physician and surgeon is that degree of skill possessed and exercised generally by physicians and surgeons of ordinary care and skill in the same or similar communities as was defendant located."

Upon appeal the Court held:

"The second instruction is erroneous in requiring of the defendant his best skill and ability. The rule is that a physician must use that care and skill which is exercised generally by physicians of ordinary care and skill in similar communities, and the Court should have so instructed the jury. No man is always at his best. One who employs a professional man may expect from him the ordinary care and skill of his profession. He is liable if he does not give this, but more cannot be demanded. If the physician is responsible in any case where he does not exercise his best skill and ability, then it will be a material inquiry, and evidence may be offered to show what is his best skill and ability. This would be to introduce into the case a new and confusing issue which has never been allowed. When a person employs a physician, the law implies an agreement on his part to exercise the ordinary care and skill of the profession. The implied contract goes no further and there is no liability on his part if the implied contract has not been broken. Were it otherwise, there would be no fixed rule in cases of this sort, and in every case the result would depend, not on the contract implied by law between the parties, but on the proof in that case as to the skill and ability of the physician. It is no defense to the physician that he used his best skill and ability if he fell short of the legal standard and there is no liability on his part if his care and skill come up to the legal standard; for the plaintiff's cause of action rests in the end on the breach of the implied contract between the parties."

NOTE.—The Courts are to-day generally agreed upon the test of care and skill required of physicians and surgeons. If in any particular case it may be shown that the defendant physician possessed that amount of knowledge, skill and experience, and exercised that degree of care and skill which physicians practicing in similar localities ordinarily possess and exercise, he may successfully resist a claim on account of alleged malpractice. But this test was not reached without much hesitation on the part of the courts.

To have fixed the standard of care and skill as such as might be exercised by the "thoroughly educated" physician or surgeon would have been unjust to the great body of the profession; to have required only that he be measured by the standard of the "moderately educated" physician or surgeon would have been regarding too lightly the interests of the public. So, too, it was soon discovered by the courts that "a rule of law demanding that the degree of care and skill required shall be proportionate to the severity of the injury or disease treated" would be not only impractical, but likewise work a hardship on the profession. Again, it was manifest that the locality wherein the physician practiced must be an element of consideration. It seemed reasonable that physicians in large cities must be measured by a higher standard than to be applied to the physicians located in small towns or rural districts. But this regard for the country practitioner was often found to work injustice to the people in the locality, for, as was said in an Iowa case, "there might be but few practicing in the given locality, all of whom might be quacks, ignorant pretenders to knowledge not possessed by them, and it would not do to say that because one possessed and exercised as much skill as the other he could not be chargeable with the want of reasonable skill. The law, then, wisely fixed the standard as that of "similar localities."

The doctrine of the principal case has been more clearly announced in two Missouri cases, often cited and approved. And in those cases, too, it more definitely appears just what part the physician's "best judgment" has to play. In the first of these, *West vs. Martin*, (1861), 31 Mo. 375; the Court said:

"Whether errors of judgment will or will not make a surgeon liable in a given case depends not merely upon the fact that he may be ordinarily skillful as such, but whether he has treated the case skillfully or has exercised in its treatment such reasonable skill and diligence as is ordinarily exercised in his profession. For there may be responsibility where there is no neglect, if the error of judgment be so gross as to be inconsistent with the use of that degree of skill that it is the duty of every surgeon to bring to the treatment of a case according to the standard indicated."

In the later case, *Vanhooser vs. Berghoff*, (1886), 90 Mo. 487, the Court held that where there is a difference of opinion among practical and skillful surgeons as to the practice to be pursued in a certain class of cases, the surgeon "may exercise his own best judgment, employing the methods his experience has shown him to be the best and a mere error of judgment as to this would not, under the law, make him liable in damages."

OBITER DICTA FROM FOREIGN JOURNALS.

THE LATE PROFESSOR PAUL POIRIER—J. NOIR.

In 1892 Professor Poirier published the first volume of his "Treatise on Medico-Surgical Anatomy." This "Treatise," of great practical utility, was discontinued because, in the course of its compilation, the author became cognizant of the fact that the deficiencies in French works on descriptive anatomy were so great that to refer the reader to such books would be of little value. He then bethought him of the urgency of a treatise on descriptive anatomy. With Professor Charpy he undertook the "Treatise," a work of such vast proportions that no one man could handle it. Poirier, though practically editor-in-chief, called to his aid a number of French anatomists, and with rare discrimination, gave to each the branch of anatomy of which he had made a special study. No work of similar proportions having been published, a comparison illustrating its superiority cannot be made, but the succinct words of Professor Mathias-Duval, when he presented it to the Academy, ought to suffice. "It is," said Mathias-Duval, "a veritable monument erected to French labors in the field of anatomy." In connection with his great work it would be well to mention his small, didactic chef-d'oeuvre: "Fifteen Lessons in Human Anatomy." These "Lessons," an exact reproduction of lectures delivered in the amphitheatre of the Anatomical Institute at the close of each term in dissection, enjoy an immense popularity with the students, and since their appearance in 1896, have passed through many editions.

Students are good judges and know what qualities should go to the making of a good lecturer. It is needless to state, that Professor Poirier swayed his students as few can, and to his credit, be it said, the onerous labor of lecturing never palled on him, though latterly his time was greatly taken up with other duties. For him to lecture was a passion; in addition to the regular course he gave supplementary courses; he delivered many dedicatory speeches; and his learned talks at the close of each year enlightened the students on the importance of the study of anatomy. He was a worthy successor of Professors Sappey and Fara-beuf in upholding the study of anatomy at Paris, a science which to-day, with that of obstetrics, is about the only one worthy of consideration in the domain of serious criticism.—(*Le Progres Medical*).

CLEMENCEAU AND THE PREVENTION OF TUBERCULOSIS.

The anti-tubercular war cannot accomplish much in one day. French science rightly prides itself on its past activity in the combat. And since

one of our scientists was the first to declare tuberculosis contagious, am I wrong in entertaining the hope that it will be a French savant who will be the first to determine the exact mode of transmission and the most efficacious means of immunizing individuals, or at least, of curing them? But this should not be forgotten, that all future conquests made by French savants or those of other countries will be the result not only of the work done by physiologists in their laboratories, but of the strenuous efforts of enlightened statesmen; for the war is as much social as medical. The individual of to-day should recognize the importance of preventive measures as they apply to his own family, and, better still, as they apply to the entire community. Personal and public, and in the widest sense, social hygiene would mean much; they would emphasize the importance of cleansing the cow-sheds so that the milk would be pure; they would give thought to the medical surveillance of schools; they would encourage hygienic instruction for the rich and the poor, so that mansions and tenements, emporiums and shops would be benefitted; they would see to the protection of the child against any possible contagion when it is exposed, by disinfecting contaminated rooms or houses; they would be the sharpest lance in the fight against the sort of alcoholism which debilitates the organism, thereby making it good soil for the propagation of the disease. Above all, there should be co-operation making for a severe discipline applicable alike to the individual and to society, the prime feature of which should be the organization of a society founded on the "self-defense" principle of Man vs. Disease, so that a knowledge of the danger may be understood by all, and some change for the better in our laws of modes of living be effected.

The fact that we recognize the difficulties that beset us in making a fight against tuberculosis is a step in advance, in so far as it illustrates that we are not shunning the obstacles before us in our triumphant march to victory.—(*Le Progres Medical*).

APPENDICITIS—HENRY MARET.

Another death has been caused by the results of an operation for appendicitis. Always the *results*, you understand, because the operation itself was a great success. Nowadays one never dies of anything else but *results*. If there were no *results*, we imagine, the health of an individual would soon be restored. How unfortunate it is that *results* should always obtrude themselves after an operation!

You are about to say, without an operation there would be no *results*. But what would become of the progress of surgery?

Remember, ye of little faith, that appendicitis is a disease of recent date, of which our fathers had not even the faintest idea; and being ig-

norant, excelled in strength. It is well to pardon them their dense ignorance, these old-fashioned, benighted people. All the same I make bold to state that the malady was invented to permit surgeons to operate; for if the surgeon had not longed and desired to operate, appendicitis would not have been invented. Furthermore, what has science done for us?

Already I hear the epithet "imbecile" flung at me and the statement made that though our fathers knew nothing of appendicitis, they had it all the same. When dying, I am assured, they were very tranquil; no murmur of complaint escaped them, but, crime of omission, they were ignorant of the disease and its *results*!

Is the mortality on the decrease? Not at all. There are just as many deaths now, as formerly, perhaps more, for the *results* are active in causing them. But to-day we are fortunate in knowing why. Wonderful gain, indeed. Certain obstinate individuals would prefer not to die, but they are the people who make light of the vicissitudes of life. Evidently one dies more tranquilly when one knows the reasons.

Has not medicine progressed wonderfully since the times of Hippocrates and Galen. There are some ignorant persons who think that medicine was invented to cure people. Immense and outrageous error! Medicine was invented to teach people why they die. Without doubt, on this point we of to-day are better fortified than were the people of antiquity. What more do you demand, you discontented sick! Well, well, I see it is hopeless to satisfy you.—(*La Revue Medico-Sociale.*)

INTERSTATE MEDICAL JOURNAL.

VOL. XIV.

AUGUST, 1907.

No. 8

EDITORIAL.

TWO TYPES OF HUMANITARIANISM.

Of late a struggle, which has been constant between two elements of society, has assumed quite definitely unpleasant proportions. This struggle rife with what is called *Argumentum ad hominem* and lowered at times to active mud-slinging, reminds one of the immortal dialogue between Fielding and Richardson, where the polite cognomens "beast" and "milk-sop" were interchanged; there being a modicum of truth on both sides, but at the same time, a complete and obstinate misunderstanding on the part of each contestant as to the other's motives and ends.

This ancient row, waged by two very different types of the human edition,—by those who believe in the practice of vivisection for the benefit of science, and those who hold that it should be stopped by law or at least controlled by legislation,—has recently waxed so fierce in England that the noise of battle has disturbed the peace and quiet of the rest of the world.

The almost irresistible tendency to attempt a settlement of this argument by calling a lot of names and making it so uncomfortable for our opponent that he withdraws, appeals very much to us. But we feel that we should consider such a mental fault with its hold on so many honest and good people, with greater seriousness; and at least present our views of the case, and set forth to some extent the ideas of the two parties engaged in combat.

First, then, let us consider the anti-vivisectionist. His confession of faith would read about as follows: *All pain inflicted on the lower animals by man is unwarranted and sinful, in that it does definite harm to the brute life in question, and at the same time degrades the human being: witness the fact that savage tribes, who enjoy animal suffering, have a corresponding lack of sensitiveness regarding human life and pain. The sacrifice of animal life and the production of pain and suffering among animals is not to be justified on the basis that humanity may be benefited thereby, for the sanctity of animal life should be held invio-*

late and protected from the ruthless and objectless inroads of the animal experimenter. Persons desiring to inflict pain and suffering on animals become callous thereby and are prone to look upon individuals who object to these cruelties as "sentimental fools and meddling idiots," thus evidencing their hopeless degradation and blind brutality.

These views, principally based on ignorance, are augmented by a certain testiness and objection to interference which has always characterized the scientific mind. Let us examine more closely into the various phases of this belief.

The argument is nothing new. Have not the Buddhists and the Hindus for ages respected the life of animals, believing the souls of all living creatures to have the power of transmigration, and to be either ascending or descending the scale? Do we not all feel a kindred feeling for that most misguided of sentimentalists, my uncle Toby, who, "has scarce the heart to retaliate upon a fly,—go, says my uncle Toby, one day at dinner; to an overgrown one which had buzzed about his nose and tormented him cruelly all dinner-time, and which after infinite attempts, he had caught at last, as it flew by him; I'll not hurt thee, says my uncle Toby, rising from his chair and going across the room with the fly in his hand; go, says he, lifting the sash and opening his hand as he spoke to let it escape: go, poor devil, get thee gone, why should I hurt thee? This world is surely wide enough for both thee and me." Do we not all feel a heart-twinge for the fox caught in a cruel trap and driven to the necessity of gnawing off a limb or of dying of starvation? Who among us does not realize the terrors and pain of the slaughter-pen, or the horror of the bird shot on the wing, or of the moose or elk pursued by the hunter and his dog, driven to an unequal battle and killed for the sport of the thing! But sport is a necessary and health-giving exercise and we must all have meat to eat and furs and feathers to wear.

To us, who are a little sentimental on our own account, the unnecessary slaughter of the forest birds and animals seems, beyond doubt, wicked and degrading; and the remarks of Professor Sedgwick strike a responsive cord in us, that until he became a biologist, he was an inexorable hunter, but after work in the laboratory and a better understanding of the animal sensorium, he never had the heart to stalk a deer.

The attack of the anti-vivisectionist seems to be directed against only one wave of the deluge of human cruelty that is about to submerge animal life and drown the finer sensibilities of mankind. The butcher may do his cruel slaughter of the innocents, the trapper and hunter may starve and maim the wild animals, the beautiful birds may be snared and shot for their plumage and the fish that look so pretty in the water, may be hooked out and allowed to die. These animals and their fate do not interest us for we must have all this delicious food and beautiful raiment.

But the scientist, working out his problem in the laboratory, is alone the reprehensible individual; he alone is accused of being guilty of taking delight in the simple act of killing, and of doing cruelties.

Another phase of this most interesting question is that concerning our right to sacrifice the life of plants. Suppose we are willing to become what Mr. Angell calls "Ethico-Religious Vegetarians" and confine our diets to other than animal food, must we not consider the life of the state-ly cabbage and the vital soul of the delicate bean? Have we a right to destroy these? A chemical diet, however, would seem on first sight to be unpleasant, and we fear would prove uneconomical.

The onward march of science is not to be checked by prejudice. This has often been tried, but history sparkles with the record of such resistance failing in its purpose. Prejudice and ignorance, which are responsible for so much of our trouble and misunderstanding, are still at work and have introduced into the anti-vivisectionist's mind a picture which only a little investigation and thought would forever dispel. The experimental laboratory is not a place inhabited by fiends who take delight in discovering the more sensitive nerves in an animal and in subjecting them to electrical stimulation, nor do the experimenters take pleasure in designing poisons that will cause delightfully interesting convulsions. It is a place, — but we shall not insult our reader by rehearsing the necessity for animal experimentation, nor in extolling the great benefits to man, to animals and to plant life which have been discovered by this kind of study. And we also feel that scientific men and their methods stand out clearly enough in this world of doubt and darkness to need no defensive statements whatsoever.

What is in our mind to convey, is the thought that the lack of intelligence and information which makes of an individual an anti-vivisectionist is apt to induce him beyond the line of sentimental foolishness, into the ranks of the definite harmdoers; that is, to make of him a person striving for a wrong ideal at the expense of the rest of humanity. We wish we could convince him that the little humanitarianism he is fostering is directed against the true humanitarianism, against the good fight to defeat disease and old age and suffering and pain, not alone on the part of man, but among the animals and plants as well.

The plan adopted by the active members of this cult, is decidedly a vicious one; they appeal for legislation against the scientist, claiming that he is cruel, and that what he does is of no definite use. They make it necessary for the man who is giving his life to research designed to aid humanity, to go before our legislative bodies and defend himself on a charge that is both ignorant and wicked in its intent. In this respect the anti-vivisectionist is no sentimental fool; on the contrary he appears as an individual who would rather have his child die of diphtheria or

dysentery, rather have malaria or yellow fever himself, rather die of tuberculosis and infect others before his death, than to endure a reversal of his fixed idea regarding the experimental laboratory, the experimenter, and his work.

Let us not be too harsh with the anti-vivisectionists, but let us rather convince them that their efforts are misguided; that instead of striving for legislation against a few careful, painstaking scientists, who are thoroughly imbued with a nobler kind of humanitarianism, they had better encourage a general educational crusade against cruelty to wives, to children and to horses; and at the same time try to limit the destruction of our wild animals, killed for the sole satisfaction of the sportsmen.

THE PROGENY OF DERIDED MYSTICISM.

Not many decades back the *Encyclopedia Britannica*, in Vol. I, p. 459, gave utterance with its usual sonority to the following weighty and definitive statement: "Alchemy was, we may say, the sickly, but imaginative infancy through which modern chemistry had to pass before it attained its majority, or, in other words, became a positive science." Mysticism also got its share of abuse in the same authoritative work, the writer not for a moment supposing that the end of the nineteenth century would upset some of his most cherished and time honored theories.

That such an expression as the above should have been written by a critic of modern chemistry and accepted by the scientific world, is not surprising when we remember the attitude of the material philosophers of those times to any innovation that could have affected the fundamental ideas of all physical and chemical science. Self-satisfied and smug, the scientific world went wagging on, and the mere mention of the belief in the transmutability of one element into another; the transmission of thought through space; the influence of one mind over another; the idea of physical matter being rendered invisible at will, is treated with the persiflage which our scientists indulge in, especially when they wish to express contempt and scorn for a thing beneath their notice. And thus the tale ever runs: stiff-necked scientists, working quietly and sedulously on good conservative lines, unwilling to pay tribute to those researches of science that might topple over their principles of physics and chemistry!

In the face of what is happening to-day, the skepticism that seems never to desert us, is meeting a crushing adversary in the shape of many brilliant and remarkable discoveries. The props that have upheld the superstructures of chemistry and physics for years, and were thought to be adamant, are slowly crumbling away before the onset of radium, helium, the electrons or corpuscles of an atom, the radio-activity in the common air and soil, the advocacy of one prime element—in a word,

before the unintentional onslaught of the dogma of Paracelsus, and the teachings of alchemy and mysticism.

That there should be philosophers who are still unwilling to acknowledge our debt to alchemy and mysticism in pushing the world of thought ahead, should not surprise us, for to unseat Sir Humphrey Davy, who rejected as an impossibility the transmutability of one metal into another, and to put in his stead Paracelsus, would indeed be sacrilege. But the discoveries of Mme. Curie, of Prof. J. J. Thomson of Cambridge, and of Sir William Ramsey, ought to be convincing enough for such a little world as ours, that the former teachings of chemistry and physics are not invulnerable, and that the tenets of mysticism are, in reality, the vision of truth.

To show the onward march of mysticism we have but to mention Elie Metchnikoff's new book, "The Nature of Man." Here are embodied the latest ideas of the Russian bacteriologist regarding the prolongation of life. To Metchnikoff old age is abnormal, and no part of healthy physiological function; moreover, he asserts the time is not far distant when life will be prolonged indefinitely. This will depend on the victory resulting from the eternal fight between those vigilant policemen, the leucocytes, with the invading army, awfully arrayed, the bacteria. "If this be true," says Charles Kassel, in a recent article in the *Open Court*, "it needs but to learn the habits of these tiny pillagers of the frame, and to curb or neutralize their action, when the prophecy of Metchnikoff and the beautiful fancy of the ancient mysticists flowers into fact."

It would be well to remember that this book is not written by a dreamer of poetic fancies but by a man whose whole life has been devoted to the study of bacteriology. And yet, beneath the modern bacteriological dress of his theory, we see without any great difficulty, not the mere promptings of the alchemist's dream, but a scientific acceptance of alchemy's fundamental tenets.

Some day when the world is older and the things happening to-day are fully digested, a critic will arise among us who will tell the marvelous tale of the latter half of the nineteenth and the beginning of the twentieth century. The story will be greedily read, no doubt, for it will illustrate in how far the scientists erred in refusing to recognize the elements of derided mysticism as a force in shaping the newer phase of science. But the greatest lesson that will be flung to the world will be this, that the science of chemistry and physics is not a study that should lumber on from precedent to precedent, with only a slight change, now and then, but should be subject to great upheavals, even though these may come from sources that bear the hall-mark of a ragged reputation.

ETERNAL TRUTH OR EVERLASTING DOUBT?

The war between eternal truth and everlasting doubt is one that goes merrily on, despite the asseverations of the optimists that it has really come to an end, with Truth triumphant and Doubt defeated. No matter what the problem, no matter what the discovery, a phalanx armed cap-a-pie soon appears to sow dissensions in the ranks of the believers by preaching the tenets of the unconvinced. This has been done so often when a discovery that would be a boon to humanity is made, that the mere mention of the criticisms coming from the objectors must sound like supererogation; nevertheless, we are moved to an iteration of these criticisms, when a subject such as vaccination, which has passed its centenary of acceptance, is still liable to foolish and fatuous attacks.

In a recently published book, "Lady Mary Wortley Montagu and Her Times," by George Paston*, is shown how the intelligence of an extraordinary Englishwoman made possible the introduction of inoculation with smallpox in England as a preventive measure against the disease. Writing to Mrs. S. C., probably Sarah Chiswell, in a letter dated Adrianople, 1717, she says: "A propos of distempers, I am going to tell you a thing that I am sure will make you wish yourself here. The smallpox, so fatal, and so general among us, is here entirely harmless by the invention of ingrafting, which is the term they give it. There is a set of old women who make it their business to perform the operation every autumn, in the month of September, when the great heat is abated. People send to one another to know if any of their party has a mind to have the smallpox; they make parties for this purpose, and when they are met (commonly fifteen or sixteen together), the old woman comes with a nutshellful of the matter of the best sort of smallpox, and asks what veins you please to have opened. She immediately rips open that you offer her with a large needle (which gives you no more pain than a common scratch), and puts into the vein as much venom as can lie upon the head of her needle, and after binds up the little wound with a hollow bit of shell. * * * The children or young patients play together all the rest of the day, and are in perfect health till the eighth. Then the fever begins to seize them, and they keep their beds two days, very seldom three. They have rarely above twenty or thirty in their face, which never mark; and in eight days' time they are as well as before their illness. Where they are wounded there remain running sores during the distemper, which I don't doubt is a great relief to it. * * * There is no example of anyone who has died in it; and you may believe that I am well satisfied of the safety of the experiment, since I intend to try it on my dear little son. * * * I am patriot enough

* G. P. Putnam's Sons.

to take pains to bring this useful invention into fashion in England; and I should not fail to write to some of our doctors very particularly about it, if I knew any one of them that I thought had virtue enough to destroy such a considerable branch of their revenue for the good of mankind. Perhaps, if I live to return, I may, however, have courage to war with them."

Despite the hopefulness of her attitude, Lady Montagu certainly reckoned without her host, for no sooner had she promulgated her new theories in England than she became the butt of perhaps the bitterest attack ever leveled at a reformer. The medical profession rose en masse against her, predicting with blare of trumpets, the most appalling and disastrous consequences, and the clergy took the cue at once from the thin drippings that fell from the vituperative articles in medical journals and the daily press, to expatiate on the heinous offense of attempting to seize boldly events that rightly belonged to Providence. And following the daily instruction dealt out by the profession and the clergy, the common people hooted the unnatural mother who had risked the lives of her own children. Like all reformers, Lady Montagu's path was one of nettles instead of primroses. Disheartened, discouraged, she repented during the four or five years after her return to England, her humanitarian undertaking; and she repeatedly declared that had she foreseen the persecution that the new treatment would bring upon her, she would never have attempted to introduce it.

We of a later day are prone to be severely critical of our forbears when we read how ungraciously they behaved toward the person who gave them the means to eradicate a fearful disease. We glide with the greatest ease into the role of Supercilious Critic, forgetful all along that by merely stretching out our hand, a finger or two would soon rest on defects in our so-called broadened ken, quite as bad as the intolerance and unbelief that characterized the dawn of the eighteenth century. Even to-day Mr. John Burns is pacifying the ferocity of the English antivaccinationists by a Bill introduced into the House of Commons and which runs as follows: "No parent or other person shall be liable to any penalty under Section 29 or Section 31 of the Vaccination Act, 1867, if within four months from the birth of the child he makes a statutory declaration that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers the declaration to the vaccination officer of the district." And in this country is the Truth in regard to the benefits of vaccination so securely lodged that Doubt would not display unwonted activities in case a death from vaccination were reported? Truly Emerson was right, when he said: "We think our civilization near its meridian, but we are yet only at the cock-crowing and the morning star."

MOTORS FOR MEDICAL MEN.

The question whether or not medical men should divorce themselves from the luxurious conveyances with which they have been so long identified and adapt themselves to the popular locomotive spirit of the times, is agitating a considerable number of minds both here and abroad. It is an excellent subject for heated argument; its many points lending themselves to the sort of oratory and invective peculiar to all subjects that bear the insignia of vastness and significance.

The English, being decidedly an epistolary people, have discussed the pros and cons of motors for medical men in innumerable letters printed in their medical journals, and though we Americans have not done the same thing, being rather averse to having our names appear under printed letters—that faithful watchdog, the Medical Critic, has made us fearful of the slightest publicity—our many-faceted conversations on the subject have embraced similar enthusiasms and prejudices. And this being the case, to-wit: that conversations are always ephemeral despite gesticulatory accompaniments, it is necessary to hark to England for published sentiments on the vital query of motor or no motor for the physician.

The *British Medical Journal* has been the principal depository for the high-tensioned “talks,” the number of which is so appalling that the good nature of the editor must often have been overtaxed. In the June the 1st issue, one M. D. Durham writes enthusiastically about his motor: “Previously I kept two horses, but the disagreeable smell from the dung heap and the pest of flies in the summer, decided me on a change. * * * In conclusion, I may say I never was mechanically inclined, but I now find infinite pleasure in looking after my car and making the necessary adjustments to keep her up to working pitch. I have had better health in the last twelve months, and I frequently get little runs out to see friends which previously was impossible. I always advise my brother practitioners to stick to horses unless they are prepared to know and superintend their car themselves and on no account to leave themselves in the hands of a chauffeur.”

This may sound like fulsome praise to those of us who have suffered some inconvenience on account of the inexperience of certain “medical chauffeurs,” who, when we are about to cross a street, insist upon delaying our progress by allowing their machines to perform many wizard pentagrams; but to those who have enough enthusiasm for the motor to overlook slight inconveniences, the praise bestowed by M. D. Durham deserves attention. He has tried horses and found them wanting; he is his own chauffeur and feels secure in advising others to do as he does. So enamored is he of the new-fangled toy that his scientific mind ignores

the sad consequences so often dwelt upon by German and French scientists—the unsteadiness of the hand, sometimes resulting in partial paralysis, and the bacteria, infesting eyes, ears, mouth and clothes of the man behind the wheel.

What boots it to place on the highest pedestal a thing that is still caviare to the general? Among us there is a goodly number of revered physicians whose conservatism is entirely against the displacement of the buggy by the motor car. This adoration of the buggy, a peculiarly American institution, can be explained only on literary grounds. While celebrated English and French authors make no mention of the buggy as a vehicle for doctors, they give enough information about the delights of the gig, the cabriolet, the calash and the coach-horse, in connection with a doctor's peregrinations in town and country, to prejudice the American physician in their favor. Did not Dr. Benassis, the "Country Doctor of Balzac," and Dr. Slop, Laurence Sterne's creation, ride horseback, the latter "coming slowly along, foot by foot, waddling thro' the dirt upon the vertebrae of a little diminutive pony," to be thrown finally, "twelve inches deep in the mire?" And did not Dr. Pendennis have "a gig with a man to drive him," and a "poor old mother who had the happiness of seeing from her bedroom window, to which her chair was rolled, her beloved John step into a close carriage of his own—a one-horse carriage it is true, but with the arms of the family of Pendennis handsomely emblazoned on the panels? Then there was Chevalier Taylor, the quack oculist of the 18th century, who by means of a magnificent coach and four impressed the masses with his learning and respectability, a thing that would have been impossible had the most decorative motor car been used.

Remembering the literary and scientific influences responsible for the major part of the conservatism in our medical circles, will any one have the hardihood to advance other reasons than those given above for the retention of the weather-stained, grotesque creation of the vehicular art—the American buggy?

LITERARY NOTES.

L'Annee Psychologique, for 1907, edited by Alfred Binet, has been published by Masson et Cie, Paris. This is Volume XIII, and compares favorably with the preceding annuals on the same subject. The table of contents indicates great variety, among the articles being such as the Physician and the Pedagogue by Ley, The Rise and Fall of the N-rays, by H. Pieron, Expert Handwriting and the Dreyfus Case, by Crepieux-Jamin, Psychology of Thought, Larguier, and Chronic Mental Confusion, by Regis et Laures.

Professor Calmette, director of the Pasteur Institute at Lille, is the author of a new work entitled "Les Venins, les Animaux Venimeux et la Sérothérapie Antivenimeuse." For fifteen years Professor Calmette has worked incessantly on the subject of the physiology of poisons. Although he has published many articles pertaining to the subject, in French, English and German journals, this is his first attempt to collect them in book form. All those interested in biological research will find this work one of great value.

Methuen & Co., (London), have recently published "The Evolution of Life" by H. Charlton Bastian, Emeritus Professor of the Principles and Practice of Medicine and of Clinical Medicine in University College, London. To quote the author in his Préface: "During the past year, in my leisure time, I have again been at work on the subject of Archebioses, and have, I trust, done something at last which will carry conviction to very many as to the reality of the present *de novo* origin of living matter. The penultimate chapters of this book will show that in my new attempt to solve this old and fascinating problem, the experiments have in some respects been conducted in a new way, though by methods as notable for their simplicity as for their stringency in reference to all possible precaution."

William Heinemann (London), has issued "Metabolism and Practical Medicine," by Carl von Noordan, Professor of the First University Klinik in Vienna. The English version is by a staff of translators under the editorship of I. Walker Hall, Professor of Pathology, University College, Bristol.

Prof. Hugo Magnus, the distinguished oculist, whose death in his sixty-fifth year is announced from Breslau, was the author of a number of valuable works, among them "Geschichte des grauen Staars," "Blindheit und ihre Verhuetung" and "Darstellung des Auges in der antiken Plastik."

An important contribution to the study of psychology is Professor W. Mitchell's "Structure and Growth of the Mind," to be issued shortly by The Macmillan Company. Professor Mitchell, who holds the Chair of Philosophy in the University of Adelaide, has written what might be called a universal introduction to psychology. It is not an introduction in the usual sense of an elementary survey, but rather an original investigation of the problems preceding the study of psychology proper. Although a product of original thought, the book is cast in a form easily grasped, and should prove of special value to the general reader.

Cassell and Company have just issued "Worry—The Disease of the Age," by Dr. C. W. Saleeby.

ORIGINAL ARTICLES.

A MEDICAL CAREER AND THE INTELLECTUAL LIFE.

BY CASEY A. WOOD, M. D., D. C. L.

Professor of Ophthalmology, Northwestern University, Chicago; President of the American Academy of Medicine.

Ever since I was capable of judgments that seemed to stand the test of later experience I have concluded that the most conspicuous want of the medical practitioner is a useful and pleasure-giving recreation. What that particular form of occupation should be may well vary with the individual, but that it should be instructive—perhaps unconsciously instructive—seemed to me to be self-evident.

Although the desire to be generally well-informed is almost universal, it cannot be said that the efforts in that direction of the average man are generally crowned with success. It will appear on investigation that for some reason or other a number of us are over-educated in some particular and ignorant, or comparatively ignorant, in others. It is not so evident that we do not know *much* as that we do not know many things. For the majority, this failure to be an all-round man has its *fons et origo* in one or more of the mere happenings of life. Either the forces born in us, our environment, the application of parental or other authority (well meaning but injudicious) or some other cause over which we have been unable to exercise control has intervened to give us a one-sided view of literature and life.

The failure to receive a well-balanced training is, so far as the physician is concerned, not far to seek. Most of our earlier years are occupied with the passing of a matriculation examination, the study of medicine proper and its application to the acquisition of a practice. All the paths and all the highways lead, or seem to lead, to the Rome of medicine. This habit of talking and thinking and dreaming about the *ars medica* and, probably of regarding all earthly and even all supernal things through the medical microscope, while it undoubtedly tends in most men to success in practice and it may be, to great achievements, undoubtedly contracts the mental horizon. He cannot fix a clear and steady gaze upon truth as a whole, who is always comparing her greater pictures with some medical masterpiece, however meritorious. Doubtless it is difficult, when the most impressionable years of one's life have been offered on the altar of a noble calling, to realize that the Universe offers other and quite as interesting aspects of nature as the manifestations of health and disease in even that wonder of wonders—our fellow man. Let us

then begin early in life to inquire what precautions one may take to avoid that learned narrowness which, without unjust criticism, may be laid to the door of the science and art of medicine.

That the reply to such a question is not upon the surface is evidenced by the fact that so many and so varied answers have been given by teachers apparently competent to advise. One of the numerous contributions to such a discussion is found in an address by Sir John Herschel, who, in eloquent measures, has set forth the advantages of literary pursuits. In books, says he, we find at once our solace, our refinements and our recreations. "If I were to pray for a taste which should stand me in stead under every variety of circumstances, and be a source of happiness and cheerfulness to me through life, and a shield against its ills, however things might go amiss, and the world frown on me, it would be a taste for reading. I speak of it, of course, only as a worldly advantage and a mode of pleasurable gratification. Give a man this taste, and the means of gratifying it, and you can hardly fail of making a happy man, unless, indeed, you put into his hands a perverse collection of books. You place him in contact with the best society in every period of history—with the wisest, the wittiest—with the tenderest, the bravest and the purest characters that have adorned humanity. You make him a denizen of all nations—a contemporary of all ages. The world has been created for him. It is hardly possible but that the character should take a higher and better tone from the constant habit of associating in thought with a class of thinkers, to say the least of it, above the average of humanity. It is morally impossible, but that the manners should take a tinge of good breeding and civilization from having constantly before one's eyes the way in which the best bred and the best informed men have talked and conducted themselves in their intercourse with each other. There is a gentle but perfectly irresistible coercion in a habit of reading, well directed, over the whole tenor of a man's character and conduct, which is not the less effectual because it works insensibly and because it is really the last thing he dreams of. It cannot, in short, be better summed up than in the words of the poet—

Emollit mores, nec sinit esse ferus.

It civilizes the conduct of men—and *suffers* them not to remain barbarous.

Far be it from me to underestimate the value of good literature or even to doubt that .

Books are men of higher stature,

And the only men that speak aloud for future times to hear!

but there is a something in medical ideals not entirely satisfied by the thoughts of others, however lofty and inspiring. The pleasure of pe-

rusing and a certain satisfaction in pure literature are not denied to the physician more than to other men, but the *physician* (using the word in its derivative sense) must have a feeling of unrest who is not engaged, even during his recreation, in work likely to add to the sum total of human knowledge. One of the most beautiful and pathetic of the Niebelungen myths tells us how the demigod Siegmund declined a life in Walhalla when he found that the earth-born Sieglinde was denied admittance to Paradise.

Siegmund:
Begleitet den Bruder
Die braeutliche Schwester?
Unfangt Siegmund
Sieglinde dort?

Brunnhilde:
Erdenluft.
Muss sie noch athmen
Sieglinde
Sieht Siegmund dort nicht!

Siegmund:
So gruesse mir Walhall,
Gruesse mir Wotan,
Gruesse mir Walse
Und alle Helden—
Gruess' auch die holden
Wuensches—Maedchen:
Zu ihnen folg' ich dir nicht.

So it is with the doctor; enduring satisfaction comes to him only when he follows the physicist's ideals. For these, at times we are called upon to desert even the Elysian Fields of literature!

The proposition that every man, especially he who is absorbed in a business (and what American is not?) should have an additional occupation that may also serve the purpose of a recreation, is by no means new. Not only is there nothing original in the idea itself, but a discussion of the kind and amount of the occupation forms no inconsiderable part of the literature of medical sociology. For example, quite recently one of our most distinguished Fellows, writing in the *Saturday Evening Post*, gives men of fifty (or thereabouts) such excellent advice that I am tempted to repeat part of it, even to some of his equally learned associates.

"First, and most vital, keep up your exercise and recreations, especially the latter. Drop tennis when you find it exhausts you, or hurries your heart afterward or disturbs your sleep, but take an hour a day more golf in its place. If the rifle with its long, heart-straining tramps over mountain and dead-fall tires you, so that you don't react from the trip, take to the shot-gun and the stubble-fields and copses. If the gun becomes too

strenuous, fall back on the rod, but don't give up your outdoor life on any account. There is no need to take too much anxious thought about these problems. Nature has a guiding instinct for middle age and declining vigor, just as she has for youth and growing powers. As long as you like to take active exercise and sport, and feel exhilarated and refreshed (even if a little stiffened) by them, keep them up; they are doing you good. When you feel that they are getting a little too much for you, when you don't feel fresher for them next day, cut down on them a little in intensity. If the man of the dominant decades is so unfortunate as to have no hobby, by all means let him beg, borrow or hire one. Better still, two—one indoor and one outdoor. Nothing will do more to keep him young. Roses, chrysanthemums, cherries, Orpingtons, games, collies, bull-terriers Angoras, wild flowers, birds, shells, butterflies, book-plates, first editions, clocks, old blue andirons, stamps, brass, bric-a-brac—no matter what, so long as they arouse an interest entirely apart from their monetary value. Next to outdoor sports they are the best Elixir of Youth known. Don't plan to retire from business unless you have a hobby to retire on, as well as a competency."

It may appear needless for me to choose a subject for the presidential address that, when all is said, is naught but a plea for the truth of an ancient and well-worn contention. On the other hand, if any of you will make inquiries among his medical friends he will, I believe, be struck not only by the poverty, but by the paucity of recreational resources at their command. This defect, as I conceive it, is perhaps less prevalent among men whose literary accomplishments are well above the average—for example, among men eligible to Fellowship in the American Academy of Medicine. This condition is doubtless due to the fact that the range of possible occupations is the greater because of an early acquaintance with them made during school and college life. It is, of course, more likely that the physician will revive college associations in the shape of advanced literary or scientific pursuits than if he had never taken part in them. Conversely, the practitioners whose extra-medical studies have been confined to cramming those subjects which were needed to satisfy a more or less critical matriculation examiner—these are unlikely to be followed in after years as a joyous surcease from the pains of practice or the sorrows of our daily conflict with the powers of darkness.

Centuries before and years after Herbert Spencer wrote his famous chapter on that subject, many a philosopher observed that there is no constant, or at least no necessary, relation between learning and wise living. Knowledge comes, often, because a number of taskmasters have stood over us for a dozen years and driven us as slaves to the scholastic galleys, but wisdom, how often she lingers until experience has brought home to us—if she ever does—those lessons that our teachers fondly imagined (or

perhaps only hoped) had become organic in us and would ever issue in wise and fruitful acts. These tender offshoots from the tree of knowledge, that, finding a congenial soil within our garden of life, spring up and bear ornamental flowers and edible fruit we should be thankful for—but they are comparatively rare. So far as wisdom in action is concerned, heredity, environment and experience rank as causative factors, well above precept.

It might, in this connection, even be argued that a literary education has in it certain inhibitory elements so far as living the hygienic life is involved, in that the "pale cast of thought" is simply suggestive of systemic anemia. Certainly an indoor life is not a healthy life nor is it conducive to sanity of either thought or action. In advocating the pursuit of some branch of the natural sciences as the desirable recreation of the practitioner of medicine, I have not forgotten those members of our profession who, while pursuing their professional avocation, have achieved greatness in the various fields of literature. We need not leave our own country or our own times for a list of men whose contributions to letters have won fame wherever the English language is read. There will at once occur to you the names of Oliver Wendell Holmes, of Weir Mitchell, of John William Draper, of Wm. Osler, and of many others who have contributed their quota but, bearing in mind the warning of Woods Hutchinson "not to drop a recreation unless one can replace it by another equally valuable," I desire to put forward a plea (or several pleas) for the adoption of what I may be allowed to call the "outdoor" sciences as the most useful and most valuable of all the recreations.

Imprimis, it is hardly necessary that I point out to you the close relation between the natural sciences and the study and practice of medicine. One cannot run over in his mind the preparation which is generally recognized as needful in a medical *repertoire* without including some part of all of them. Where would rational medicine rest to-day without a considerable knowledge of practical biology, physics, botany, zoology and chemistry? It is impossible to conceive of a well-informed physician ignorant of these branches. In all ages he knew, or was expected to know, about all of these sciences that was capable of being acquired by the educated man of his times. I sometimes think that Moliere would not have had occasion to write his "*Medecin malgre lui*" if there had been a Huxley, a Darwin or a Spencer accessible in his day. The physician has generally been about as ignorant, or as learned, as the physicists of his day. I believe, then, we may admit that the medical man who chooses the pleasant ways of a physical science, may walk upright within them and need never fear that he is far from home.

Then, again, see how much more "worth while" the investigations of science are than mere book learning. If I were disposed to argue the

question I believe I should first read carefully Herbert Spencer's essay on Education and the "Town Geology" of Charles Kingsley, whose name is dear to those who love science, revere literature and respect religion, because he lived them all in one fair life.

Spencer, in an endeavor to answer the query, "What knowledge is of most worth," believes that it may be answered by an appeal to conduct tempered by knowledge. "How to live?—that is the essential question for us. Not how to live in the material sense only, but in the widest sense. The general problem which comprehends every special problem is, the right ruling of conduct in all directions, under all circumstances. In what way to treat the body; in what way to treat the mind; in what way to manage our affairs; in what way to bring up a family; in what way to behave as a citizen; in what way to utilize all those sources of happiness which nature supplies—how to use all our faculties to the greatest advantage to ourselves and others—how to live completely." And these conditions, as you know, the author shows to be filled to a very large degree by a careful study of the natural sciences.

Without desiring to bore you by needless reiteration of a truism let me again refer to the high value which Spencer attaches to biology which, by the way, he thinks has a fundamental bearing on self-preservation.

Another argument in favor of a recreation that involves a study of some branch of the natural sciences is the fact that it is generally an outdoor occupation. In this fact lies a peculiar advantage because the pursuit of such a recreation forces the man who mainly does an office practice, into the open air and encourages him to lead, at least in part, an outdoor life, but it also falls in with the existence of the physician whose daily vocation is carried on in the very workshop where the tools of his trade are always at hand.

If Emerson wrote what Thoreau thought, the student of nature will willingly listen to the following words: "In the woods a man casts off his years as the snake his slough, and at what period of life soever, is always a child. In the woods is perpetual youth. Within these plantations of God a decorum and sanctity reign, a perennial festival is dressed, and the guest sees not how he should tire of them in a thousand years. In the woods we return to reason and faith. There I feel that nothing can befall me in life—no disgrace, no calamity (leaving me my eyes) which nature cannot repair." Kingsley, in the preface to his little work says, "I have tried rather to teach the *method* of geology than its facts; to furnish the student with a key to all geology, rough indeed and rudimentary, but sure and sound enough, I trust, to help him to unlock most geological problems he may meet in any quarter of the globe. But young men must remember always that neither this book nor all the books in the world will make them geologists. No amount of book learning will

make a man a scientific man—nothing but a patient observation and quiet and fair thought over what he has observed. He must go out for himself, see for himself, compare and judge for himself, in the field, the quarry, the cutting. He must study rocks, ores, fossils in the nearest museums, and thus store his head not with words but with facts. He must verify—as far as he can—what he reads in books, by his own observation, and be slow to believe anything even on the highest authority, till he has either seen it, or something like enough to it, to make it seem to him probable or at least possible. So, and so only, will he become a scientific man and a good geologist and acquire that habit of mind by which alone he can judge fairly and wisely of facts of any kind whatever.” Where, let me ask, will you find any collection of sentences that more thoroughly breathe the spirit of modern medical research than the foregoing? Finalities the truth does not always permit us to know—

Sed pater omnipotens speluncis abditit atris

but each of us may look things in the face and try to see them as they actually are.

It is not my purpose to pass before your tired eyes all the outdoor sciences for your selection as a recreation, because what is true of one is generally true of a dozen others. I shall close by a reference to botany, with its many subdivisions into agriculture, floriculture, arboriculture, forestry, etc., as offering a most varied choice to the scientific activities of the medical man. It is closely allied in all its parts to the peculiar training and the daily practice of every doctor. In its study are combined all the virtues, all the pleasures, all the entertainments, all the recreations of the scientist.

I would, at this juncture, refer those who fear that the study of natural science is likely to extinguish the poetry of life in the close consideration of things material, to Edmund Spenser's Catalogue of the Trees.

Much can they praise the trees so straight and high,
The sailing pine, the cedar proud and tall,
The vine-prop elm, the poplar never dry,
The builder oak, sole king of forests all;
The aspen good for staves; the cypress, funeral,
The laurel, meed of mighty conquerors
And poets sage; the fir that weepeth still,
The willow, worn of forlorn paramours.
The yew, obedient to the bender's will,
The birch for shafts, the saw for the mill,
The myrrh sweet bleeding of the bitter wound,
The war-like beech, the ash for nothing ill,
The fruitful olive and the plantane round,
The carver holm, the maple seldom inward sound,

Or, if this evidence is insufficient, what about that poet-botanist whose heart "danced with the daffodils," probably at the time he saw

A violet by a-mossy stone
Half-hidden from the eye,
Fair as a star, when only one
Is shining in the sky!

In choosing the expression "Intellectual Life" as a part of the title of this address I did so, bearing quite distinctly in mind that I should attempt to show that the study of natural science is not only what I have claimed for it but that its appeal to the intellect is more direct than pure literary pursuits, however great their merit. In asserting that the pursuit of scientific studies is the natural and proper recreation of the medical man, I have said little about persistence of value. While golf and tennis lose their charms, and the collecting of china and rugs ceases to attract, the intimate association with and a contemplation of the laws that regulate and the mysteries that surround what we call Nature, is not only a pleasant recreation but has the prime advantage of enduring to the end and bringing with it that peace which harbors no delusion and conceals no misfortune because it is founded on an immovable rock, the truth that is in and for humanity.

It is peculiarly appropriate that the Nurse upon whose knee and at whose feet we have learned all we know and who has tenderly watched over us in our wanderings towards the Goal should close our eyes in death. Inasmuch as

Nature never did betray
The heart that loved her.

She should, that at the end of our existence, take us unto Herself. The prayer of St. Augustine has been translated into a more modern view by Anatole France by the thought that it is the voice of our Mother Earth that calls to us in the evening of life, and, when the night falls, wraps us within her everlasting arms.

A STATISTICAL STUDY OF THE RELATION BETWEEN THE HEIGHT OF THE LONGITUDINAL ARCH AND THE FUNCTIONS OF THE FOOT.*

By PHIL. HOFFMANN, M. D., St. Louis.

During the summer of 1904, while examining the feet of primitive peoples at the St. Louis World's Fair (L. P. E.), the great variety of impression records obtained from feet that were functionally normal led me to study statistically the question of relation between the height of the longitudinal arch and the usefulness of the foot.

The records forming the basis of these statistics were made by the method of weight bearing on smoked paper. It is true that they do not really show the height of the longitudinal arch, as they are commonly believed to do, but show the breadth of the arch and how much of the sole comes in contact with the ground on weight bearing. This, however, bears a relationship to the height of the arch, and I speak of height in connection with these records in this sense only. Comparison of smoked imprints with plaster casts of the same feet, taken while bearing the body weight, showed, in each instance, that the carbon impression corresponded to the flattened area of the sole of the cast, showing that the weight-bearing area could thus be accurately determined. The casts also showed that there was an almost constant relation between the extent of this area and the arch height, that is, the further the imprint extended inward, the lower was the arch.

To simplify the comparison of records, I chose six types of arches, ranging from the well marked to the totally absent, and grouped the intermediate grades with the types they most nearly resembled. Fig. 1, A, high arch; B and C, moderate; D, somewhat low; E, very low; F, absent.

Impressions were taken of 186 individuals that had never worn footwear, seven of which were Central African Negroes, and the balance Filipinos. It is significant that among these I did not find a single foot associated with the symptoms of weakness so common in adult shoe-wearing feet, which are weakened by the restraint the shoe exerts over function. Through interpreters I made careful inquiry in regard to this, especially whenever I found an arch that was exceptionally low. All had strong and flexible feet. Lowness of the arch, where such was shown by the impression, was real, and not merely simulated by an underlying pad of fat.

The following tables, 1 to 8, illustrate the frequency with which the different types occurred in the barefooted groups:

* Read before the St. Louis Medical Science Club.

Table 1. Frequency with which the different types of arches shown in Fig. 1 occurred in 46 Moros, Philippine Islands. Feet symptomless:

Type of arch...	A	Number of individuals...	4	Per cent...	8 16/23
	B		6		13 1/23
	C		7		15 5/23
	D		7		15 5/23
	E		9		19 13/23
	F		13		28 6/23
			<hr/> 46		<hr/> 100

Table 2. Frequency of different types in 27 Bagobos, Philippine Islands. Feet symptomless:

Type of arch...	A	Number of individuals...	2	Per cent...	7 11/27
	B		6		22 6/27
	C		5		18 14/27
	D		4		14 22/27
	E		5		18 14/27
	F		5		18 14/27
			27		100

Table 3. Frequency of different types in 3 Mangyans, Philippine Islands. Feet symptomless:

Type of arch...C	Number of individuals...	1	Per cent...	33 1/3
E		2		66 2/3
		<hr/>		
		3		100

Table 4. Frequency of different types in 70 Igorrotes, Philippine Islands. Feet symptomless:

Type of arch...	A	Number of individuals...	6	Per cent...	8 $\frac{4}{7}$
	B		2		2 $\frac{6}{7}$
	C		8		11 $\frac{3}{7}$
	D		24		34 $\frac{2}{7}$
	E		18		25 $\frac{5}{7}$
	F		12		17 $\frac{1}{7}$
			<hr/> 70		<hr/> 100

Table 5. Frequency of different types in 33 Negritos, Philippine Islands. Feet symptomless:

Type of arch...A	Number of individuals... 3	Per cent... 9	3/33
B	4	12	4/33
C	5	15	5/33
D	6	18	6/33
E	6	18	6/33
F	9	27	9/33
	<hr/> 33	<hr/> 100	

Table 6. Frequency of different types in all Philippine tribes. Feet symptomless:

Type of arch...	A	Number of individuals...	15	Per cent...	8 4/9
	B		18		10
	C		26		14 5/9
	D		41		22 8/9
	E		40		22 3/9
	F		39		21 7/9
			179		100

Table 7. Frequency of different types in 7 Central African Negroes. Feet symptomless:

Type of arch...	A	Number of individuals...	2	Per cent...	28 4/7
	B		1		14 2/7
	D		2		28 4/7
	E		1		14 2/7
	F		1		14 2/7
			7		100

Table 8. Frequency of different types in all barefooted subjects examined. Feet symptomless:

Type of arch...	A	Number of individuals...	17	Per cent...	9 4/31
	B		19		10 7/31
	C		26		14
	D		43		23 4/31
	E		41		22
	F		40		21 16/31
			186		100

In addition to the 186 barefooted individuals, I examined 45 South African Negroes, all adult males with functionally good feet, who had gone barefooted up to early manhood, and had worn shoes during the last five or six years only. Table 9 shows the frequency of the different types of arches in this group:

Table 9. Frequency of different types in 45 South African Negroes. Feet symptomless:

Type of arch...	A	Number of individuals...	6	Per cent...	13 3/9
	B		7		15 5/9
	C		8		17 7/9
	D		7		15 5/9
	E		11		24 4/9
	F		6		13 3/9
			45		100



FIG. 1.—A few of the types of arches found in normal feet.

That as great variation in the height and shape of the longitudinal arch exists in Caucasian shoe-wearers as in barefooted peoples, is shown in table 10, which is based upon the examination of 200 pairs of normal, or, at least, symptomless feet:

Table 10. Frequency of different types in 200 Caucasian shoe-wearers. Feet symptomless:

Type of arch...	A	Number of individuals...	27	Per cent...	13½
	B		20		10
	C		27		13½
	D		53		26½
	E		40		20
	F		33		16½
			—		—
			200		100

That the same is true of the American shoe-wearing Negro is shown in table 11, which is based upon the examination of 100 pairs of symptomless feet.

Table 11. Frequency of different types in 100 American shoe-wearing Negroes. Feet symptomless:

Type of arch...	A	Number of individuals...	18	Per cent...	18
	B		13		13
	C		19		19
	D		21		21
	E		16		16
	F		13		13
			100		100

Table 12 shows the variation in five sandal-wearing Ainus.

Table 12. Frequency of different types in 5 Ainus, Caucasian sandal-wearers, Northern Japan. Feet symptomless:

Type of arch...	B	Number of individuals...	1	Per cent...	20
	C		1		20
	D		1		20
	E		2		40
			5		100

It is probably true that weakness of the structures composing and maintaining the longitudinal arch is, in some instances, accompanied by a lowering of the arch, and, that, on account of this lowering, the area of the sole of the foot coming in contact with the ground is increased. However, it was demonstrated by examination of imprints (collected between 1892 and 1904), of 560 feet that presented more or less typical symptoms of strain or weakness of the longitudinal arch, that gross change in the height of the arch is not as frequent an accompaniment of weakness as is commonly taught; in fact, that the average character of the imprints of feet with weakened arches does not differ much from the average character of those of symptomless feet. The result of this examination is shown in table 13.

Table 13. Frequency of different types in 560 Caucasian shoe-wearing feet that presented symptoms of weakness of the longitudinal arch:

Type of arch.....	A	Number of feet.....	64	Per cent.....	11 $\frac{3}{7}$
	B		72		12 $\frac{6}{7}$
	C		76		13 $\frac{4}{7}$
	D		92		16 $\frac{3}{7}$
	E		108		19 $\frac{2}{7}$
	F		148		26 $\frac{3}{7}$
			560		100

Table 14 shows the comparative frequency with which the different types of arches occurred in Philippine Malays (barefooted); Central African Negroes (barefooted); South African Negroes (barefooted up to the last six years); American Negroes (shoe-wearers); Caucasians (shoe-wearers); Ainus, Caucasians, Northern Japan (sandal-wearers); all presenting symptomless feet; and in Caucasians (shoe-wearers), under treatment for symptoms of weakness of the longitudinal arch.

Table 14.

Types—For types see figure 1.

	A Per Cent.	B Per Cent.	C Per Cent.	D Per Cent.	E Per Cent.	F Per Cent.	Total Per Cent.
Philippine Malays, barefooted. Feet symptomless. Individuals examined, 179.....	8 $\frac{4}{9}$	10	14 $\frac{5}{9}$	22 $\frac{8}{9}$	22 $\frac{3}{9}$	21 $\frac{7}{9}$	100
Central African Negroes, barefooted. Feet symptomless. Individuals examined, 7. Number too small for reliable conclusions.....	28 $\frac{4}{7}$	14 $\frac{2}{7}$	....	28 $\frac{4}{7}$	14 $\frac{2}{7}$	14 $\frac{2}{7}$	100
South-African Negroes, barefooted up to last six years. Feet symptomless. Individuals examined, 45	13 $\frac{3}{9}$	15 $\frac{5}{9}$	17 $\frac{7}{9}$	15 $\frac{5}{9}$	24 $\frac{4}{9}$	13 $\frac{3}{9}$	100
American Negroes, shoewearers. Feet symptomless. Individuals examined, 100.....	18	13	19	21	16	13	100
Caucasians, shoewearers. Feet symptomless. Individuals examined, 200.....	13 $\frac{1}{2}$	10	13 $\frac{1}{2}$	26 $\frac{1}{2}$	20	16 $\frac{1}{2}$	100
Ainus, Caucasians, Northern Japan. Sandalwearers. Feet symptomless. Individuals examined, 5. Number too small for reliable conclusions.....		20	20	20	40	....	100
Caucasians. Shoewearers. Under treatment for symptoms of weakness of the longitudinal arch. Individuals examined, 560.....	11 $\frac{3}{7}$	12 $\frac{6}{7}$	13 $\frac{4}{7}$	16 $\frac{3}{7}$	19 $\frac{2}{7}$	26 $\frac{3}{7}$	100

Analysis of table 14 shows that in the 536 individuals of different races, with symptomless feet, the American and primitive Negroes presented a smaller percentage of low and a larger percentage of high arches than did the Caucasians. This contradicts a commonly accepted view. The Philippine Malay showed a somewhat larger percentage of low arches than did either the Negro or Caucasian. Another thing shown in this table is that the 560 Caucasian feet with symptoms of weakened arches, did not present a much larger percentage of low arches than did the normal or symptomless Caucasian feet. The histories accompanying these 560 impression-records, show



FIG. 2.—Impression records of the normal feet of a Bagobo woman, Philippine Islands. Note difference between right and left.

that the feet with long standing or severe symptoms did not occur oftener among the lower arch-types than did those whose symptoms were mild or of short duration.

While it is true that, usually, the impression records of the normal right and left foot of one individual are practically alike, there is, in occasional instances, a marked difference, Fig. 2. This occurs in both primitives and shoe-wearers. So, too, in individuals with one foot strong and symptomless, and the other presenting symptoms of arch strain or weakness, the impression records of the two feet, while usually the same, show, occasionally, one arch to be lower than the other, *and the lower record is just as frequently made by the strong as by the weakened foot.*

If these statistics are a fair index for all feet, one may be justified in drawing the following conclusions:

1. That there is no one type of arch as the normal.
2. That, contrary to common opinion and teaching, the height and shape of the longitudinal arch are of no value in estimating the strength or usefulness of the foot.
3. That normal feet present high, medium and low arches in nearly the same proportions as do feet with weakened arches.
4. That weakness of the longitudinal arch rarely results in its de-

pression, and that *flat foot* as a *pathological* entity is not common (compare tables 10 and 13.)

5. That the impression records of the longitudinal arch, commonly made by surgeons, are of no value in the diagnosis of arch strain, or weakness, *so-called* flat-foot, whose symptoms are dependent upon a weakened arch, and not upon its lowness, except in so far as this lowness is a transition from an original higher condition with concomitant change in the relationship of the tarsal bones, which transition occurs by far less often than is generally believed.

3337 Washington avenue.

TWO CASES OF INFECTION WITH A GAS-FORMING BACILLUS; FOLLOWED BY OPERATION AND RECOVERY.*

By R. C. LOVING, M. D., 1st Lt. Asst. Surg., U. S. Army.

(From the Surgical Service, the Division Hospital, Manila, P. I.)

In 1891, Welch and Nuttall¹ reported the post-mortem finding of a new gas-forming bacillus in a patient who died of an aneurism of the ascending aorta, and chronic pulmonary and acute miliary tuberculosis. The subcutaneous connective tissue, the heart and blood-vessels, and other organs of the body contained gas. The organism isolated was found in pure culture wherever gas was found in the tissues. It proved to be an obligatory anaerobe and was from 4 to 6 microns in length, was non-motile, stained by Gram, coagulated milk, and did not liquefy gelatin. This organism was named *Bacillus Aerogenes Capsulatus*, which name was changed very properly by Migula, in 1900, to *Bacillus Welchii*. It was found to be non-pathogenic but developed in the tissues of the inoculated animal if the animal was killed shortly after the introduction of the organism.

Two cases of infection with a gas-bacillus occurring in my professional work during the past year of service in the Philippines, (in one of which the organism as described above was isolated and identified, and in both of which surgical measures other than amputation were resorted to with success) may be of sufficient general interest to be made a matter of record.

Case 1.—Tambogan, a Moro tao, was shot by an American soldier on the afternoon of June 22, 1905. Three days later he was brought in to Camp Keithly, Mindanao, by friendly Moros, and was subsequently referred to the surgeon for treatment.

He was a young Moro of average height. Physical examination revealed nothing of importance other than the area of the wound. The

* Published by permission of the Surgeon General, U. S. Army.

wound of entrance was in the left ischio-rectal region close to the tuberosity of the ischium. From it was obtained on slight pressure, a bubbling, frothy, fluid, which had a very foul odor. The margin of the wound was swollen and gangrenous. His left thigh was swollen to twice the size of the right, was very tense and edematous, and crackled on pressure. Percussion gave a sound very much like that of a muffled drum. The subcutaneous crepitation extended over the entire thigh from the upper part of the calf of the leg to and including an area 6 c.m. above Poupart's ligament in front, and to the upper part of the buttock posteriorly. The left buttock was so distended that it reached 4 c.m. past the median line. His pulse was very weak but not rapid and his temperature on admission was 102. He was profoundly depressed.

He was immediately operated upon. On account of his poor condition and the impossibility of securing healthy flaps for an amputation, it was decided to clean out the necrotic tissue and secure good drainage.

The first incision extended 18 c.m. around the inner border of the left buttock. Passing through the wound of entrance, it opened a gangrenous tract which led from the ischio-rectal fossa downward toward the inner side of the knee.

The second incision, 20 c.m. in length, was over the adductor group of muscles. A 38-cal. bullet from a Colt's revolver was found along the inner surface of the femur at the junction of the middle and lower thirds.

A third incision extended along the outer margin of the posterior group.

A fourth incision opened the fascia of the anterior group. Numerous smaller incisions were made to drain the subcutaneous areolar tissue.

The first three incisions were connected and held open by through and through strips of gauze and the limb wrapped in a loose dressing.

A bath-tub was then improvised out of a rubber sheet, and six hours after the operation the patient was put in the tub with enough bichloride of mercury solution of 1 to 5000 strength to cover the limb. He was redressed every morning and soaked as described for four hours on six consecutive days with no untoward symptoms. On the second, third, and fourth days he was given an additional irrigation with potassium permanganate solution, to diminish the foul odor which had necessitated his isolation in a separate tent.

After the formation and gradual separation of large sloughs the patient's condition steadily improved. He was discharged from the hospital on July 28, 1905, with a serviceable limb. The only impairment was a slight muscular stiffness.

On account of lack of facilities I could not definitely determine the infecting agent. I found, however, on smears from the wound, a coarse

bacillus which showed a halo when stained with the usual aniline dyes, and which grew at the depths of a stab in plain agar with formation of a slight bleb. In view of the clinical appearances of this case and the findings in the second, I am of the opinion that it was a true case of infection by the gas bacillus of Welch.

Case 2.—The second case was that of Cadaba, a Philippine Scout, who was gored in the leg by an angry carabao. He was brought to the hospital three days later. The limb was distended with gas from the toes to the middle third of the thigh. The wound was in the upper portion of the middle third of the left leg midway between the tibia and fibula. Bulging from it was a dark, frothy mass of blood-clot and decomposed muscle tissue. There was likewise a characteristic discharge of foul gas and frothy serum.

Encouraged by the success in the first case, we decided to clean up the wound instead of amputating, which at first seemed advisable. While scooping out the rotten muscle tissue with the finger the anterior tibial artery came away and started a brisk hemorrhage which was controlled with difficulty. The vessel walls would not hold a ligature and it was necessary to leave a hemostat on the artery where it pierced the interosseous membrane. Multiple incisions were made and the same after treatment used as in the first case. Except for an alarming hiccough he had an uneventful but tedious convalescence.

In this case the bacillus aerogenes capsulatus seu Welchii was isolated by Lt. H. D. Bloombergh, Asst. Surg., U. S. Army, Pathologist of the Division Hospital. His report showed that the organism corresponded in every respect to the organism originally described by Welch. It therefore failed to liquefy gelatin, although some observers believe that under the proper conditions it is a liquefier. As a rule the organism stained very well with Gram, but occasionally in the same smear from the animal cadaver or from a young culture, individual bacilli were found to have been decolorized. No spores could be demonstrated.

Welch and Flexner early showed that this capsulated bacillus was found normally in the intestinal contents of man and in the soil. And from the work later on accomplished by Welch, his associates, and pupils, it would seem that this organism is one of the most widespread of all bacteria, having been frequently found in the intestinal canal of man and numerous animals, in the soil, in the sweepings from the floors of wards of hospitals, in cess-pools, in market milk, in wounds where the organism had shown no signs of its presence, and even in scrapings from normal skin.

It has been found practically in every part of the body that can be invaded by organisms of similar pathogenic properties. In this connection it is interesting to note that the organism plays a role in the forma-

tion of "holes in the brain" and "gas cysts" as shown by Reuling and Herring² and Madison³. Of equal interest is the finding by Gwyn of the organism in the circulating blood fifteen days before death in a case which ante-mortem showed no signs of the infection but in which unfortunately no post-mortem could be obtained. Regarding the geographical distribution, Welch in 1900 speaks of cases being reported from Germany, Italy, Austria, and France, and he later states that Flexner informed him that during the latter's three months' stay in Manila, three cases came under observation.

Examination of a report to the Surgeon General, the U. S. Army, submitted by Dr. R. P. Strong, Manila, P. I. in 1900, at which time he was in the Army medical service as Pathologist at the old 1st Reserve Hospital, shows that the bacillus aerogenes capsulatus was found in eighteen cases at necropsy. He states that in four of these cases the infection was probably post-mortem. Major W. D. Crosby, Surgeon, U. S. Army, tells me that he had two cases of this infection while in command of the 1st Reserve Hospital, Manila, P. I. One was a gun-shot flesh wound of the abdomen. It was given free drainage and treated antiseptically with a good result.

The other case was a gun-shot wound of the leg. The patient did not recover, although amputation was performed.

There are cases on record of incomplete amputation of an infected extremity with drainage and antiseptic treatment applied to the stump.

I have been unable to secure access in Manila to the article by Bloodgood⁴ in which I believe he has shown that incision followed by the bichloride bath was effective in certain of his cases. The results obtained by Stewart⁵ show that this treatment may be sufficient and it seems time to consider the advisability of not amputating in cases of simple gas bacillus infection without complications.

The author's cases were only two. But the involvement was extensive and amputation was not necessary. Both were natives and it is possible that natural immunity has considerable influence in the Philippine Islands, and that the native accustomed to live in a humid atmosphere and amidst the damp filth of his lowly habitation is less susceptible to infection and therefore more amenable to treatment.

The gas bacillus is saprophytic and anaerobic and seems to elaborate toxins of feeble potency. In experimental inoculations in animals it is necessary to kill the animal to secure a growth. It has been found in living tissue but under such conditions it did not possess its gas producing properties, and was probably not actively growing. There are two cases on record of amputations which were covered with emphysematous flaps and which nevertheless recovered. It is highly probable that they did recover because sufficient drainage was secured to obviate the me-

chanical effects of distension. The infection was certainly not removed and the shock of an amputation was added.

In the light of these facts it seems much more rational to make numerous free incisions to liberate the gas and give complete drainage. As an after treatment the bichloride soak continued for hours on successive days with occasional permanganate douche is recommended.

REFERENCES.

1. Johns Hopkins Hospital Bulletin, Vol. III.
2. Ibid., Vol. X.
3. American Medicine, April 5, 1902.
4. Progressive Medicine, 1899, IV.
5. Jl. Am. Med. Assn., Vol. XLV, Vol. VIII.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

THE EARLY DIAGNOSIS OF CARCINOMA OF THE STOMACH.—V. Aldor (*Wiener klin. Wochenschrift*, 1907, No 20.).—There is no attempt on the part of the writer to give a general discussion of the methods of diagnosing carcinoma, but he enters at once into a consideration of three laboratory methods which have been carefully tested by him. Salkowski's method of determining the presence of albumose in the urine is regarded as a great diagnostic help in these cases.

Aldor gives a modification of this method which he has worked out in the examination of a large number of such cases. In forty carcinoma cases 56 per cent. showed the presence of albumose. While the mere presence is not significant of carcinoma, nevertheless the writer regards the constant presence as of great significance.

Solomon's method of determining the presence of nitrogen in the carefully washed stomach is also regarded as valuable in recognizing the presence of an ulcer, not necessarily however of a malignant type. Lastly, occult hemorrhage is discussed and special emphasis is made on the necessity of placing these patients in the hospital, where a careful diet can be carried out for some days before any conclusions can be drawn from the positive findings. Aldor emphasizes the fact that while these three methods in themselves are not of great diagnostic value, they may lead to a very early diagnosis when all three are present together with other symptoms.

SURGICAL ASPECTS OF SOME DIGESTIVE DISORDERS FROM THE STAND-POINT OF THE INTERNISTS.—Arneill (*New York Med. Jl.*, June 22, 1907).—The writer reports a number of stomach cases in some of which brilliant results were attained by operation, while in others the patients were not benefited. The cases in which results were satisfactory come under that group in which surgeons have learned by experience alone that gastro-enterostomy is the ideal operation and satisfactory results can always be obtained, namely those with pyloric obstruction, stagnation and chronic hemorrhage. The second group includes that class of cases in which the neurotic element was not excluded, and in which, at the time of operation, an ulcer was not demonstrable.

The writer makes a few statements in regard to the diagnosis of ulcer of the stomach and duodenum and concludes by recommending exploratory operations, where a conscientious, intelligent and scientific examination leaves doubt as to the diagnosis and treatment. He rightly suggests that the dangers of exploration are much smaller than those of procrastination.

PNEUMATURIA, WITH REPORT OF A CASE.—Taussig (*Boston Med. and Surg. J.*, June 13, 1907).—The writer reviews the literature on the subject, which, though dating back as early as 1860, comprises comparatively few cases. The case described is that of a colored woman, age 34, who had previously undergone an operation for carcinoma of the cervix uteri. This patient was catheterized frequently following the operation. Fistula was not present and a bacteriological examination of the urine showed the presence of a bacillus, which the writer regards as an intermediate type between the bacterium coli commune and the bacillus lactis aerogenes. Sugar was not present in the urine. The conclusions drawn by the writer give a general knowledge of this rare condition.

Pneumaturia may occur either as the result of a rectovesical fistula or of intravesical fermentation. In the latter type, the gas may originate either from the fermentation of glucose in diabetes, or from the decomposition of proteid substances in cystitis. Of the nondiabetic cases, the micro-organism responsible for the pneumaturia has been isolated in only eight cases: in three, it was the bacillus lactis aerogenes, and in five (including the one reported above) the bacterium coli commune. In pneumaturia due to the bacillus lactis aerogenes, the gas formation is readily referable to the peculiar characteristics of the bacillus. In pneumaturia due to the bacterium coli commune, the gas formation may be due: To the presence of some proteid, not yet definitely determined, that yields a gas when broken down anaerobically by the bacterium coli commune, as suggested by Adrian and Hamm; or to the presence of a peculiar strain of bacterium coli commune that is capable of producing gas where the usual varieties fail to do so.

The fact that the bacterium isolated from this case had in its earlier generations an abnormal gas-producing power on ordinary culture media lends support to the second hypothesis.

INDICANURIA, ITS ETIOLOGY AND PRACTICAL SIGNIFICANCE.—Porter (*Medical Record*, June 15, 1907) thinks that there is no pathological condition the interpretation of which is of greater importance to the general practitioner. While he recognizes indicanuria as a symptom, nevertheless he regards it as one of great value. He accepts the theory of the formation of indican in the intestinal tract and does not regard its formation in the liver as possible. Its presence in the urine is never normal, but always indicates some abnormal condition, being the result of a putrefactive process in the intestinal canal. He regards errors in diet, lack of out-of-door exercise, defective digestive secretions and profound disturbance in the nervous mechanism as conditions favoring the production of indican. The writer regards the absorption of other toxins which are produced at the same time as the indican in the alimentary tract as playing a great part in the production of an endless train of symptoms, especially brought about by their action upon the nervous system. For a successful treatment of this condition, it is necessary that the etiological factors entering into the production of indicanuria be recognized and overcome.

A CONSIDERATION OF THE QUESTION OF THE RELATION OF EHRLICH'S REACTION, BACTERIEMIA AND WIDAL'S REACTION IN TYPHOID FEVER.—A. Th. Genken. (*Muench. Med. Wochenschrift* No. 18, 1907).—The writer in a preliminary report concludes that the diazo reaction and bacteriemia in cases of typhoid fever which have been treated by drugs, not disturbing the diazo reaction, run parallel. The diazo reaction is found only in that stage of typhoid in which the Eberth's bacillus is found active in the blood. The elimination of the bacilli from the blood, or the complete agglutination of the same, leads to a complete disappearance of the diazo reaction even though the fever exists. At the same time the Widal reaction is positive. In typhoid cases which have been treated with salol and calomel, the above relation is not maintained, in that a typical diazo is not present even though bacteriemia exists.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

ABSORPTION OF TYPHOID BACILLI IN THE IMMUNE ANIMAL.—T. H. Buxton (*Jl. of Med. Research*, Vol. XVII., No. 2).—This eighth part of Buxton's researches on the absorption from the peritoneal cavity, leads to conclusions that are exceedingly interesting, and also important for certain phases of the process of immunization. He has found that a rabbit immunized against typhoid bacilli does not dispose of a not lethal dose of living typhoid bacilli more quickly than a normal rabbit. It does not become appreciably more resistant to the endotoxins. The immunity probably resides in the increased capacity of the phagocytes for taking up bacilli. The endotoxins, therefore, on the destruction of the bacilli in the immune animal, are liberated chiefly into the cellplasma of the phagocytes, instead of directly into the body fluids, as in the normal rabbit.

The influence of the opsonins upon the bacilli is limited to the effect that they become more acceptable to the macrophages. Indirectly, however, the opsonins protect the immune animal, since, as said before, the endotoxin does not enter into the body fluid, but is formed and most likely destroyed within the body of the phagocytes. This reasoning appears highly logical and justified, and may serve to give a closer insight into the working together of the various immune substances. The point that has not been settled, in all the opsonin work, is the question of the difference between antibody-loaded bacilli and antibody-free bacilli. The influence of attachment of antibodies to bacteria ought to be studied in regard to their capacity for being taken up by phagocytes. The question whether intact bacteria can be phagocytosed has not been definitely determined. After all the opsonic action may be only eliminatory of detritus.

ON SERUM ANAPHYLAXIS IN THE GUINEA-PIG.—P. Gay and E. E. Southard (*Jl. of Med. Research*, Vol. XVI., No. 2).—Gay's and South-

ard's work on a very puzzling phenomenon, first discovered by Theobald Smith, and then more closely studied by Otto, in Germany and Rosenau and Anderson in our country, has led to a better understanding of its nature. The phenomenon itself, that probably has a bearing on methods of serum-therapy, may be concisely described first: the injection of any convenient amount of horse-serum, subcutaneously or intraperitoneally, in normal guinea pigs, produces no ill effects. If, however, guinea pigs are given a very small dose of this serum (0.001 to 0.1 cc.), and ten days or two weeks later are again injected with a larger amount (5 cc.), they will die almost invariably within an hour. Phenomena analogous to this have been observed before in animal experimentation; Otto and Rosenau pronounced the action of small doses as sensitizing, while larger and repeated injections were said to cause immunity. The authors have closely investigated the subject, studied the anatomy of the lesions, and altogether exhausted the methods of research and inquiry. While a detailed review of the methods and experiments would be impossible, it must be said that the trend of the paper allows of no doubt of their correctness, and is a justification of the conclusions in which they sum up their results. These are as follows: The well-known susceptibility to intoxication by horse serum, which is demonstrable in guinea pigs previously injected with horse serum, is due to the non-neutralization and non-elimination by the animal body of a factor in the serum, for which they suggest the name anaphylactin. The intoxication caused by the second injection depends upon other substances than the anaphylactin. This factor corresponds to the constituents of the serum eliminable by the animal body. The reaction of intoxication would seem to be a cellular one dependent upon the heightened power of assimilation on the part of cells which have been subjected to the anaphylactic substance over a definite period of incubation. The tissues of guinea pigs, during the anaphylactic phase, show no demonstrable lesions. Striking multiple hemorrhages, for some reason undescribed, accompany the toxic phase. The hemorrhages are more frequent in the stomach, cecum, lung and heart than elsewhere. Microscopic study demonstrated that the hemorrhages are largely associated with widespread fatty degeneration of the endothelium. The heart muscle, voluntary muscle, the peripheral nerves and the gastric epithelium show striking fatty changes which are independent of the vascular lesions. The task of the anaphylactin is apparently to prepare various cell structures so that their contained fat is made to flow rapidly together upon exposure to the toxic agent. The rapidity of this degeneration is striking, though it presents histologically the features of so-called chronic degeneration. The fact that animals receiving large injections of horse serum successively at intervals of several days do not show symptoms of disease, is not due to immunity produced by the injections. If such animals are injected again after a longer period (several months, sometimes) they will succumb with the same symptoms and lesions as the animals sensitized by an initial dose. The presence of anaphylactin in such seemingly refractory animals can be demonstrated by the injection of this serum into normal guinea pigs, that will succumb on subsequent injection to the intoxication. The period of incubation in producing sensitiveness is longer than the time that is used for the successive massive injections.

OBSERVATIONS ABOUT NATURAL TUMORRESISTANCE IN MICE.—M. Haaland (*Ber. Klin. Wochenschrift*, 1907, No. 23).—While it is to the credit of Ehrlich to have demonstrated the possibility of increasing the virulence and growth of mouse-carcinomata to such a degree that no more failures occur in the inoculations, which with primary tumors is the rule, his explanation of this phenomena by the assumption of an atreptic immunity, cannot be accepted for the phenomenon that Haaland has observed in his experiments. It was known before, that the different breeds and races of mice differed greatly in their susceptibility to inoculation; that certain tumors would only grow on one race and never on others. Jensen's tumor is the first instance, or the first observation made in this direction, and confirmed later in many cases. Haaland gives his experience in this line; his investigations, however, went farther. A sarcoma of a virulence that reached regularly 100 per cent of the inoculations, obtained from Ehrlich and thoroughly studied at the latter's laboratory, was brought to Norway. Inoculation of mice of Norwegian origin was absolutely unsatisfactory. In consequence, a supply of mice of the race used in Ehrlich's work, was sent by Ehrlich to Haaland. Control inoculations of these mice were made in Frankfort and in Christiania. While in the former results were always positive, the results in the latter were nearly negative, although the same method was employed in both. While the difference in the results of the inoculation of tumors in mice of different breed or race may be explained by a difference in the qualities of the inoculated cells, or by the constitutional condition of the animals, Haaland has shown by numerous experiments that the latter factor plays the principal part. On the other hand, the observation of the refractivity of the Frankfort mice when brought to Christiania cannot be explained by constitutional qualities. Close investigation proved that no error of experiment was at the bottom of the failure. The only factor that varied in both cities was the food and the way of keeping the experimental animals. As mice in Frankfort, of the breed of one and the same mother, succumbed to the tumor, the others, from the same breed, remained free from the growth in Christiania, the difference must be due to circumstances, given by the changed surroundings and nutrition. Investigation in this direction is going on now. Other observations show that not only constitutional or external or nutritive conditions influence the susceptibility of a mouse, but that there are differences also in the single individual. Young mice are more susceptible than old mice; sick or undernourished animals do not give positive results, or at least the condition interferes greatly with the growth of the tumor. According to Ehrlich's views the condition would be due to a battle between the tumor cells and the tissues for nutritive material. Similar conditions are the rule in trypanosoma infection of the rat, where a pregnant female is immune to the infection, a fact that the reviewer has frequently observed. An analogous instance in human pathology is the fact frequently observed, that during pregnancy an existing tuberculosis remains more or less stationary, to become rapidly progressive after the pregnancy is terminated. It is evident that all these data apply as well to the primary tumor. Certain constitutional or

other conditions may persist in certain races; as has been demonstrated for the mouse carcinomata. Observations and statistics from human pathology would fall in line with this way of accounting for the so-called heredity of tumor formation.

METASTATIZATION OF HISTOLOGICALLY BENIGN TUMORS.—R. Borrmann (*Zieg. Beitræge*, Vol. 40).—Borrmann's paper is a valuable additional proof that destructive and metastatic growth of tumors is not dependent upon a certain type of cells, but is principally an inherent characteristic of all genuine blastomata. This case of a malignant subcutaneous haemangioma is a very important parallel to the cases of metastatic leiomyomata and chondromata reported by others. The history of the case is, briefly, as follows: A subcutaneous haemangioma, in a woman 26 years old, was removed, followed by a recurrence after four weeks. In spite of several other operations metastatization took place and the patient died from multiple metastases in the lungs. It was very remarkable that the primary tumor as well as the metastases showed histologically only the typical structure of a simple angioma. The only unusual finding was an ingrowth of the connective tissue into the vascular structures, analogous to the phenomena observed in the benign intracanalicular fibroadenoma of the breast. Irregularity of the connective tissue growth was seen in no place; none in the cells of the vessels themselves. Nowhere immature, undeveloped cells could be observed. Borrmann's observation is significant in the highest degree. It alone does away with the assumption of a character of cells of malignant tumors physiologically, morphologically and biologically different from that of normal cells. It, too, falls in with the contentions of Ehrlich, that tumor growth is only the effect of a difference of nutritive capacity or avidity of body cells on the one hand, and tumor cells on the other. If they are present in sufficient potency, every tumor can form metastases and become malignant.

VARIATIONS IN THE STRUCTURE OF THE ENDOMETRIUM AND SO-CALLED CHRONIC ENDOMETRITIS.—A. Theilhaber (*Muench. Med. Woch.*, 1907, No. 23).—To the pathologist the name of glandular and interstitial hyperplastic endometritis has been for a long time objectionable. The fact is that these so-called endometritides are mere hyperplastic conditions, and only seldom show evidence of any form of inflammatory change. The name has been used because most mucosa examinations have been made for obscure uterine or other pathologic conditions. Normal mucosae are seldom seen. Autopsy material is usually in a condition unfit for the demonstration of finer histologic changes. Theilhaber has succeeded in obtaining material from one hundred females (including children), many perfectly healthy during their whole lives, and others suffering from certain disturbances, like leucorrhoea, etc., after abortions, during the different periods of the menstrual cycle. In all of them numerous cases of hyperplasia were found in the healthy individuals very frequently, without the history of uterine disease throughout the whole course of the life. It was established that the normal

mucosa varies greatly in thickness, the number of glandular structures and in the character of the stroma. Pictures of glandular hyperplasia, where the stroma was reduced to a thin lamella between the single glands, were observed in persons in perfect health. So-called atrophic conditions and increase of the interstitial tissue are frequently found in normal individuals, and are nothing but a physiologic alteration of age. Only in gonorrhoeic uterine infection may be found a chronic interstitial endometritis characterized by the presence of many pus cells within the stroma. Endometritis glandularis does not exist; endometritis interstitialis is not present in ordinary cases of discharge (leucorrhoea). The hyperplasia is not inflammatory in character, but caused by other influences mostly by disturbances of the circulation in the myometrium (fibroids, excesses in venere, psychic disturbances). Lack of active circulation in chlorosis and anemia may be at the bottom of this condition. The name of hyperplastic (or hypertrophic) endometritis ought to be discarded.

DIAGNOSIS.

IN CHARGE OF

ALBERT E. TAUSSIG, M. D.

UNUSUAL CASES OF PERNICIOUS ANEMIA.—Gulland (*British Med. J.*, 1907, No. 2).—The writer believes that pernicious anemia is becoming more frequent, having seen 37 cases within the last year. The view, frequently expressed, that the disease consists of a rapidly progressive anemia, soon ending fatally, is certainly false. Many cases run a very chronic course, and often the anemia itself occupies a very subordinate place in the symptom complex. The writer believes that pernicious anemia is due to a toxemia of diverse origin that may affect in various ways the blood, the hematopoietic organs, the nervous system or the gastrointestinal tract. Thus there are cases that present the clinical picture of amaurosis, peripheral neuritis or tabes dorsalis. Sometimes the most striking features consists in aphasia, or in epileptiform attacks. It is not at all unusual to have gastrointestinal disturbances occupying the foreground of the symptomatology, and sometimes leading to the diagnosis of gastric cancer, since in both cases the gastric juice may contain no hydrochloric acid. Occasionally psychic disturbances may be so outspoken that the patient is sent to an asylum for the insane. The chief point in the diagnosis of pernicious anemia is the existence of a high color index. If the first two figures of the red blood corpuscle count are multiplied by 2, and the result divided by the percentage of hemoglobin, a figure is obtained in pernicious anemia varying from 1.1 to 1.4, whereas in secondary anemias the index is usually under 1. The stained blood spread also offers a more or less characteristic picture. The author's treatment in general coincides with the well-known procedure advocated by Grawitz. Arsenic often does good, whereas iron is positively harmful.

The value of the very interesting article consists in a portrayal of the clinical difficulties that often surround the correct diagnosis in cases of pernicious anemia.

PROFUSE HEMOPTYSIS DUE TO MITRAL STENOSIS.—Schwartz (*Munch. med. Wochenschr.*, 1907, No. 13), reports an instructive case in which profuse pulmonary hemorrhages led to the diagnosis of phthisis. At the autopsy mitral stenosis and a marked sclerosis of the pulmonary artery were found. There were no emboli or infarcts, the bleeding having been apparently due entirely to passive congestion.

AUSCULTATORY BLOOD PRESSURE DETERMINATION.—Fellner and Janowski (*Munch. med. Wochenschr.*, 1907, No. 21).—At a meeting of the German Congress for Internal Medicine, B. Fellner described a convenient method of determining the systolic and diastolic blood pressure. The usual Riva-Rocci armband with mercury manometer, etc., is used. While the upper arm is being compressed by means of the armband, the observer auscultates by means of a stethoscope placed over the cubital artery, best in the bend of the elbow. When the compression of the upper arm has reached a certain degree, a systolic murmur can be heard over the cubital artery. This murmur persists as the compression of the upper arm increases, until a point is reached at which it suddenly vanishes. The pressure at which the arterial murmur appears, and at which it ceases, are carefully noted. Comparison with various other methods, especially with the excellent one of Recklinghausen, have shown that the arterial murmur appears when a compression corresponding to the diastolic pressure has been reached, and that the cessation of the murmur corresponds to the systolic blood pressure. In the discussion, Janowski pointed out that a similar method had been described two years ago by Korotkow. Janowski, too, considers the method trustworthy. If further experiment confirms the views of Fellner and Janowski, a most convenient and simple method of estimating systolic and diastolic blood pressure will be at the disposal of clinicians.

DICROTIC PULSE IN AORTIC INSUFFICIENCY.—Janowski (*Zeitsch. f. klin. Med.*, 1907, Nos. 1 and 2).—It is generally believed that a dicrotic pulse is never found in uncomplicated aortic insufficiency. When found in this condition it nearly always indicates the coexistence of a mitral regurgitation. Janowski, however, publishes a number of pulse tracings showing that a double aortic and mitral insufficiency need not produce a trace of dicrotism. On the other hand outspoken dicrotism may appear in patients with pure aortic regurgitation, especially in febrile conditions less often in heart-failure, Graves' disease or under the influence of amyl nitrite. The presence or absence of dicrotism does not, therefore, allow any conclusions as to the coexistence of a mitral lesion in cases of aortic insufficiency.

SIX CASES OF PERFORATING DUODENAL ULCER.—Gray (*Scot. Med. & Surg. J.*, Jan., 1907).—The writer emphasizes the view, held by many

other surgeons that duodenal ulcer is far more common than is generally supposed. It often produces no disturbance of any sort, until perforation occurs like a bolt from the blue. The typical clinical picture consists of pain to the right of the median line, occurring several hours after taking food, and relieved when the next meal is taken. There is hyperchlorhydria, cryptic bleeding and tenderness to pressure just below the region of the gall bladder. Any or all of these symptoms may, however, be absent. Chronic perforation, with or without the formation of a subphrenic abscess, is not rare. Acute perforation may simulate appendicitis.

THERAPEUTICS.

IN CHARGE OF

WILLIAM ENGLEBACH, M. D.

X-RAY TREATMENT IN DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS.—Pancoast (*University Penn. Bulletin*, Vol. XIX., No. 11, Ref. *Jour. Med. Science*, 1906) recently published his own observations and reviewed the literature on the subject up to date. He found that 63 cases of leukemia reported treated by the x-ray. Of these only 4, or 6.35 per cent, were still alive three to six years after the primary symptomatic cure. He assumed that it was safe to assert that this small percentage of cases in which the duration of diseases was prolonged, would not be much altered if the final report of all cases treated with the x-ray were at hand. In 39, or over 70 per cent of those that died, or were, at that time in a critical condition, there had been a marked amelioration in the symptoms, or a symptomatic cure as a result of the first treatment by the x-ray. In view of these results he considered that the Roentgen rays could hardly be held a specific in leukemia; in fact, that the effects of this treatment were not very encouraging. He further asserted that the danger attending the use of this treatment should be remembered, and the evidence of toxemia looked for. Frequent urinary examinations should be made to determine the extent and rapidity of tissue destruction, and the state of the kidneys. He said that there was clear evidence that death had been caused or hastened by the failure to observe these points. Regarding the treatment of pseudo-leukemia, he said that a cure lasting for at least three or four years may be obtained in 25 per cent of the cases treated; (2) that in almost all instances not cured, life was prolonged during a period of comparative comfort by improvement of the general condition, and pressure symptoms were relieved; (3) that no other agent would yield such good results, and (4) that a better understanding of the effects of this treatment could be expected. The treatment of polycythemia by the x-ray treatment is considered unfavorable. Twelve instances of splenic anemia have been collected by him, in which improvement had been noticed. The x-ray treatment of pernicious anemia, or even subjecting the patient to exposure, was a dangerous procedure in the presence of any evidence of toxemia.

TREATMENT OF SEVERE CASES OF "ENTEROPTOSE."—Strasser (*Med. klin. Woch.*, No. 99, 1906) has his patients lie in the dorsal position during a number of weeks, raises the spine by placing a cushion under it and "loads" the abdomen by means of a bag filled with shot or sand. This bag is placed in a half-moon manner over the lower part of the abdomen, and the bulk of its contents distributed evenly, or unevenly, so that larger quantities are distributed on both sides, in the middle, or only on one side, according to indications. The length of the bag is about 40 cm., its breadth 8 or 10 cm., and its weight about 3 kg. The bag is kept on all day, and, if possible, also over night. Strasser claims to have had good results with this "load therapy" in the treatment of the severest cases of enteroptosis.

FURTHER INFORMATION TO THE KNOWLEDGE OF ENTEROPTOSIS, AND TO THE APPLICATION OF "GLENARD'S BELT." POST SCRIPTUM REGARDING "ORTHOTIC ALBUMINURIA."—Aufrecht and Kaufmann. (*Ther. Monatsh.* No. 3, 1904).—Aufrecht clings to the idea that the "nephroptosis is the beginning (preparatory stage), and preparatory condition of enteroptosis," the symptoms of which associate themselves to the former in a changeable manner. The stomach, often already dilated, descends. There are eructations, vomiting, gastralgia, and anorexia. One can feel the pulsations in the epigastrium, and can palpate the ptotic liver. To this are added ptotic appearances of the genitalia, fatigue in the lower extremities, cardiac uneasiness (due to phrenoptosis), and manifestations of other diseases which seem to be of nervous origin. These symptoms are classed by those authors, who have not occupied themselves with the study of enteroptosis, in the class of hysteria and neurasthenia. Glenard's belt has been the most efficient means in the hands of the author. Its effect is not merely to obtain a redressment of the ptotic organs. He produced a reduction in size of the abdominal space in a direction from below upwards, which is sufficient for the improvement and even for the disappearance of subjective sensations. Improvements made by Glenard on his belt, which only make it more expensive, are thought to be unnecessary by Aufrecht. Aufrecht himself has made some modifications, but has not been able to overcome the defect of lateral pressure in women with very prominent hips. Glenard's belt might also be valuable for pregnant women, after puerperium, and for ventral hernia. Another indication for the use of Glenard's belt may be its use in cases of orthotic albuminuria, if the attempts made by Aufrecht, prove successful. He reports two cases with encouraging results. Aufrecht believes that in these cases we have to deal with a disease of individual kidney glomeruli due to the milder influences of infectious diseases. As soon as the back flow in the renal vein has become difficult, which is brought about by assuming the erect posture, albumen passes through the capillaries of the glomeruli. It might be possible that a ptosis of the kidneys will overcome the difficulty of the back-flow, and in such cases Glenard's belt may eventually bring about improvement.

SHALL WE TREAT FEVER?—Kraus (*Ther. d. Gegenwart Ref. Ther. Mon.*, June, 1907) after a historical review of the subject, investigates the cause of fever. He says late research instead of clearing up the

phenomena of abnormal temperature, has made this matter more complex. Fever is the reaction of the organisms to substances from outside introduced into it, and also the production of the antitoxins within the organism. The harmful or helpful effect of febrile temperature cannot be considered from one point of view. It is clear that it is not exclusively helpful. For this reason antipyretic is, theoretically speaking, justifiable. A moderation of the fever itself without influencing its final result is desirable. The author recommends quinine, antipyrin, and hydrotherapy. He lays special stress upon the "nerve quieting" effect of these means, which were also much praised by Liebeomister. He says that moderate antipyretic treatment is indicated in numerous febrile conditions.

THE EFFECT OF DRUGS ON THE UTERUS.—Cushny. (*British Med. Journal*, Nov. 24, 1906; *Ref. Ther. Mon.*, June, 1907), has investigated the effects of different medicines on the uterus of living animals. The animals, rabbits and cats, were anesthetized, and the abdomen opened while the animal was submerged in normal saline. The movements of the uterus were definitely recorded by means of levers. The drugs were then introduced into the jugular vein. Different animals reacted unequally, and there was a difference in the gravid and the non-gravid uterus. Nicotine produced contractions of the non-gravid uterus in the rabbit, while in the cat atony was produced. In the gravid uterus of both animals marked contractions occurred. Stimulation of the hypogastric nerve caused atony in virgin cats, while in the multiparous and gravid cats contractions of the uterus were produced. The author explains this by saying that this nerve contains inhibitory and acceleratory fibers. During pregnancy, the latter predominate, i. e., the uterus becomes so sensitive that the influence of the inhibitory fibers is neutralized. Similar effects were observed from adrenalin. Atropin had no apparent effect on the normal uterus, on the contrary, it counteracted the effect of pilocarpin, which in both the virgin and the gravid uterus, produced violent contraction. Quinine had the same effect as pilocarpin, but its effect was not influenced by atropine. Aloin given in fresh form, had no effect. Ergotin produced strong contractions, lasting several minutes, after which the uterus remained sensitive for some time. The contractions were short and continuous in some of the experiments, in which cases small doses of the preparation caused paralysis of the hypogastric nerve. With other preparations of ergot, large doses were required. The author supposes that there are two substances in ergotin, one of which produces contraction by direct stimulation of the uterine muscles, the other causing paralysis of the intermuscular nerve endings.

SERUM AND ORGANTHERAPEUTIC PREPARATIONS (*Centralblatt f. Gesammp. Ther.*, June, 1907).

ANTIGLOKUSINE: An acid extract of the mucous membrane of the duodenum. It forms a thick, light brown liquid, which possesses the property of stimulating the pancreas, and is supposed to be indicated in diabetes.

DEASYME: A liquid which possesses as its main quality the amolytic ferment of the secreting glands of the digestive tract.

SERUM FOR ECLAMPSIA: It is composed of sera of animals which have been treated either directly with fresh or dried placentas of eclampsia patients, or with aqueous alkaline or slightly acid extract of such placentas. Its administration depends upon the preparation.

SERUM FOR MENINGITIS: Obtained from serum of horses inoculated with virulent bacilli of meningitis. It is administered hypodermically in 10 cc. doses.

DEPRINE: It corresponds to the glycerine emulsion of tuberculosis, the bacillus Hansen being used instead of the bacillus tuberculosis. It is given in 10 cm. doses subcutaneously.

OPHTHALMOT: It is made from the glands of the fish "cobitis fossilis," by extraction and distillation, with 10 parts oleo amygdalolium dulcorum. It is indicated in *granulosae*.

OXYPEPSIN: Made from the culture of sputum of tuberculous patients, having high fever, (by oxidation by means of hydrogen oxide). Indication for its use is tuberculosis. It is given in doses up to 20 cm. subcutaneously.

STAPHYLASE DOYEN: It is an antistreptococcus serum in the form of a bromide and iodide.

TANNOSPLENOFERRIN: it is obtained by macerating in water the dried and pulverized spleen of cattle, and treating the filtrate with chemic acid, producing a granular rust-brown powder. It is given in anemias.

TETANUS ANTITOXINE: It is used in solid and liquid form. The solid when tetanus is active, the fluid for prophylaxis.

TUBERCLE-PROTEIN: It is a preparation obtained from tubercle bacilli, with the aid of hydrogen peroxide. It is employed to obtain a high degree of immunity.

TUBERCULIN DENYS: It is a glycerine suspension culture boullion of human tubercle bacilli. It is on the market in pure and diluted form. It is used like Koch's tuberculin.

TUBERCULOSIS ONTIEOPINE-MARIGLIANO: A powdered coagulum of blood of animals immunized to tuberculosis. It is given in daily doses of 4 gm. per os.

SURGERY.

IN CHARGE OF

MALVERN B. CLOPTON, M. D.

CONSEQUENCES OF CRANIAL INJURIES.—Cushing (*N. Y. Med. Jour.*, Jan. and Feb., 1907).—The paper covers in an interesting way, the various forms of intracranial hemorrhage and the operative measures of relief, the physiologic phenomena of compression, the question of choked disc in traumatic cases, the recent views of cortical localization and methods of eliciting cortical reaction, and of the late consequences of cranial injury, as pulsating exophthalmos, epilepsy and traumatic neuroses. Cushing believes in the mechanical as opposed to the toxic views in regard to the

formation of choked disc. The delicacy of the eye grounds permits the evidencing of the stages of acute intracranial tension which are a great aid in indicating the intracranial circulation disturbance, and also in determining the side of the compression.

In cases of acute increase of intracranial tension, the compression symptoms are due to disturbances of intracranial circulation which progress from an early compensative degree of venous stasis up to an actual arterial anemia, the effect of which can be overcome for a time by a compensatory rise in arterial tension, and it is shown experimentally that this reaction hinges on the reaction of the vasomotor center, which through constriction of the splanchnic field, increases blood pressure to the point at which arterial blood once more finds its way in sufficient amount through the medullary vessels, and so long as the systemic arterial tension is capable of holding at its increased level without wavering, and so long as the respiratory rhythm remains unaffected, just so long may we safely delay intervention. That is, that when the third stage of Kocher has been reached, when stupor has deepened, so that the patient no longer can be roused, when the slow vagus pulse begins to be replaced by one with occasional rapid periods, when the blood pressure becomes irregular, and the respiration rhythmic, then it must be recognized that death is near at hand owing to exhaustion, primarily of the vasomotor center. For traumatic cases, which are so obscure that localizing symptoms do not present, but where decompression is indicated, the author uses the intermusculotemporal operation in which the skull is opened about as is done in his Gasserian ganglion operation.

In all cranial surgery a tournique is recommended; also an artificial respiration apparatus, the one to prevent a loss of blood which would be dangerous later when the high pressure has fallen after operation, the other to continue the breathing in cases where the respiratory center has been put out of action by the loss of blood and the anesthetic.

In dealing with traumatic epilepsy he feels that the chance of permanent cure is not good (although in 49 cases he has had 13—26 per cent.—who reported themselves cured). In a majority of the cases the seizures are greatly lessened in intensity, and a gradual lessening of the attacks in number and severity is considered a more favorable sign than an immediate post-operative stopping. Early cases are expected to be benefited in a much greater degree. He further states that he believes it is better in those "border line" cases which would "recover" without operation that those that are operated upon do the best, not only immediately, but their later careers are freer from "cerebrasthenia," from epilepsy and from insanity. In basal fractures the injury is most frequently to the middle fossa, and a decompressing operation either single or double will allow the partial if not complete removal of the blood clots that later give rise to dense adhesions.

SURGERY OF THE THYROID.—Ferguson (*Med. Herald*, May, 1907).—He believes that surgical intervention in all but exophthalmic cases should only be followed after other methods have failed to relieve the patient of symptoms incident to the enlargement. In 300 cases he found that thy-

roidectomy was done for dyspnoea in 77 per cent., for deformity in 24 per cent., dysphagia in 8 per cent., tracheal stenosis in 3 per cent., for malignancy in 2 per cent. In a third of the cases a multiplicity of signs and symptoms was the indication. He gathers from Kocher's work the importance of the condition of the cardio-vascular system in determining operation, and seconds the sound advice of Kocher, not to operate in Graves' disease as a last resort. Kocher's exophthalmic cases operated numbered 176 with a 5 per cent. mortality; 158 were traced after operation, 81 per cent. were cured, 7 per cent. greatly improved, 10 per cent. improved and 2 died. The mortality in other hands is 15 per cent., 8.66 per cent., 28.5 per cent. Ferguson has operated on 58 cases, 44 simple or cystic goitres, without a death, 12 exophthalmic cases with 4 deaths, and 2 malignant cases. Eight of the exophthalmic cases were cured. The simple cases may have the wounds closed, but in exophthalmic or malignant cases the wounds are drained with rubber tissue wicks.

PLASTIC RESECTION OF MAMMARY GLAND.—Warren (*Ann. of Surg.* June, 1907).—The incision of Thomas below the gland is modified so that it runs upward and outward along the axillary border, being hidden later from view by the breast falling over it. The gland is turned upward and inward after separating the fascia which covers the posterior surface of the breast from the deep pectoral fascia which covers the muscle, and the whole of the back of the gland is in view for exploration or partial excision. A V-shaped portion of the gland is removed with a benign tumor or cyst and later closed with fine catgut. Several such sections can be removed, but in numerous small cysts it is only necessary to incise them with radiating incisions, which need not be brought together with suture as they fall in place when the gland is laid back on the chest. "Shelling out" of solid tumors is impossible and should not be tried. In case of malignant disease the complete operation can proceed, after taking precautions that none of the cancerous tissue has been distributed in the wound. The wound is closed and dressed with a binder of such a shape that it gives lateral support as well as compression. There is slight risk or discomfort for the patient, there is no disfigurement, and it is a very satisfactory substitute for the disfiguring incisions in the front of the breast.

SURGERY IN DIABETES.—Wiener (*Med. Record*, May 4, 1907).—We must distinguish between diseases due to diabetes, and those that occur independently of the disease. All necessary operations for diseases not due to diabetes should be performed just as in ordinary patients. The abnormal products (acetone, diacetic acid, oxybutyric acid, lactic acid) which circulate in the blood in diabetes do harm, (a) by injuring the tissues and making them prone to infection; (b) by acting as contributing factors in producing premature arteriosclerosis. Arteriosclerosis plays a very important role in producing diabetic gangrene. There are two kinds of diabetic gangrene: (a) that caused by changes in the arteries and veins; (b) that caused by the effect of virulent bacteria on weakened tissue. We should always endeavor to transform wet gangrene into

dry gangrene. If more than three toes are affected, especially if there is any cellulitis, a high amputation is generally indicated. If the infection is progressive, a high amputation should be done. If in doubt about the site of amputation, a high amputation will give the best results. If more than one gram of ammonia is excreted in twenty-four hours, operation had better be postponed until by careful diet the amount of ammonia is considerably reduced. The prognosis does not depend on the percentage of glucose in the urine but on the degree of acid intoxication. A strict meat diet will reduce the amount of sugar, but it will often bring on fatal coma by increasing acidity. Sodium bicarbonate given before and after operation can do no harm and may do good. Ether and chloroform should be avoided as much as possible. All operations on diabetics should be performed as simply and as rapidly as possible.

ORTHOPEDIC SURGERY.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

WEAK FOOT AND ITS TREATMENT.—Keppler (*N. Y. Med. Jour.*, June 8, 1907).—As a prophylactic measure, the author strongly advises the wearing of correct shoes, and points out the evil results of improper footwear. When the foot is weakened, and gives rise to symptoms, the employment of active exercises is indicated. Adduction and dorsiflexion, rising on the toes, followed by strong manipulation, should be employed. For more advanced types, the author recommends the use of an apparatus known as the Krunkenberg pendulum machine, which throws an increasing amount of muscular work on the foot, and relieves severe cases. As adjuvants, he recommends hot baths, massage and vibration. He advises also the use of the Whitman plate, where artificial support is necessary; this plate does much to correctly train the act of walking. A wrong arch-support does more harm than none at all. Operative interference is indicated in only the severe and selected cases, though manipulation and reduction under an anesthetic has a definite place.

OPEN-AIR TREATMENT OF TUBERCULOSIS BONE AND JOINT DISEASE.—Carling (*N. Y. Med. Jour.*, June 8, 1907).—The author strongly advocates the open-air treatment of cases infected with tuberculosis, whose bones and joints have become involved. As a majority of these cases were seen among the children of the poor, he urges the necessity for recognition on the part of the municipal government of the great good that may be accomplished by the maintenance of open-air sanatoria, drugs are not necessary except in case of emergency. Good food, fresh air and the proper surgical treatment, are all these children need in order to make a recovery.

INTERNAL DERANGEMENT OF THE KNEE JOINT, WITH REPORT OF CASES.—Freeman (*Surg., Gyn. & Obst.*, June, 1907).—No other joint is of more importance than the knee, because it has to support the weight of the body, and because locomotion depends so largely upon its integrity. Temporary stiffness generally follows an operation of any magnitude on the knee, and sometimes persists for months. Operations upon the knee should never be performed without good cause, and then under the most favorable circumstances. The author states that owing to uncertainty of accurate diagnosis in many instances, "internal derangement" remains perhaps the best designation for a certain group of symptoms. Displacements of the semilunar cartilages can usually be made out, and are generally caused by a sudden or forcible twist of the tibia upon the femur, while the knee is flexed. The most prominent symptom is sudden locking of the knee, accompanied by great pain and inability to straighten the limb, although it can often be flexed without great difficulty. The locking may be acute and cause serious disability, or it may occur from ever so slight injuries, and only cause temporary embarrassment. The author believes that acute cases should never be operated upon, but should be treated by massage, applications, and the wearing of a Shaffer brace. Bad chronic cases and those where the brace has failed should be operated upon, always under the most careful surgical precautions. It is not necessary to wait until the fluid contained in the joint becomes absorbed. The operation should be done through a U-shaped incision, lying between the lateral ligament on the one hand, and the patella and its ligament, on the other. The loose cartilage should be pulled out of the joint with a blunt hook, and cut from its moorings with scissors. The soft parts should be accurately reunited with catgut sutures, avoiding unnecessary knots, and a snug bandage and posterior splint applied. The author reports 10 excisions of semilunar cartilages done upon 8 patients, the results proving favorable in each instance.

ARTIFICIAL JOINT LIGAMENTS OF SILK.—Lange (*Munch. Med. Woch.*, liv. No. 17).—By boiling silk in a solution of bichloride of mercury, Lange has discovered that it is not nearly so liable to cause abscess formation when introduced as an artificial ligament, as when it is merely boiled in water. However, it is liable to cause an aseptic secretion. He has overcome this by saturating it with sterile paraffine after it has been boiled. The use of silk as ligaments for paralyzed flail joints, he recommends for patients under twenty years: arthrodesis for those over 20, if they desire it. After the silk has been stitched about the joint, so as to produce an artificial ligamentous support, dressings should not be removed until it has had time to become encased in the connective tissue. Gentle functional use will stimulate the adaptation of the part to the foreign substance. Care should be taken to keep the ligaments stretched, but not to allow them to be pulled out or loosened, before they have firm connective tissue supports. He reports several cases illustrative of this method.

THE TREATMENT OF RIGID FLATFOOT BY EXCISION OF THE SCAPHOID.—Legg (*Boston Med. & Surg. Jour.*, June 6, 1907).—When a rigid foot ex-

ists, with a displacement of the scaphoid, Legg recommends the excision of that bone. The operation is a simple one, and is done as follows: Through a curved incision over the scaphoid, the skin and soft parts are turned back, the bone is enucleated by freeing its attachments to the other tarsal bones. The wound is then closed and the foot corrected and put in plaster of paris. In the majority of his cases, the author has sutured the remaining joint capsules of the astragalus to that of the internal cuneiform, in order to better hold the corrected position. The tendons of the peronei and in some cases the tendons of the tibialis anticus, extensor proprius hallucis, and extensor longus digitorum, should be divided in order to fully correct the valgus. The after-treatment is of chief importance. Plaster should be kept on for three or four weeks. As the patient resumes his shoe, care should be taken that the foot does not relapse into valgus. This may be prevented by a carefully fitted plate. Crutches should be used at first, and the patient gradually accustomed to walking with the foot in the correct position. Massage, manipulation and exercises designed to strengthen the foot, should follow. The plate must be worn five or six months.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON, M. D.

ACUTE DIFFUSE GONORRHEAL PERITONITIS.—Goodman (*Annals of Surg.*, July, 1907).—After a resume of the literature on the subject, and a consideration of the conditions, the writer gives the following conclusions: Diffuse gonorrheal peritonitis is a serious and sometimes fatal malady, which, if not corrected by operation, is likely to leave a legacy of pustules in the female, already doomed to sterility, and possibly lasting invalidism. Diffuse gonorrheal peritonitis may recover under palliative or symptomatic treatment alone, but we must continue to operate upon some of the cases, with reasonable assurances of recovery. The number of cases of gonorrheal peritonitis operated upon will be diminished when we have the means of making a positive diagnosis as to the bacteriological character of the infection, or when a satisfactory antigonococcic serum shall be at our disposal. It is hoped, however, that the discussion occasioned by this report will enable us to bring to light some more clinical data which will help us to outline definitely the course to pursue in cases of suspected acute gonorrheal peritonitis. The gonococcus is capable of producing a local or a diffuse peritonitis, without the presence of other pyogenic bacteria.

A CASE OF SARCOMA OF THE BLADDER.—Whiteside (*Amer. Jour. of Urol.*, June, 1907).—The writer reports a case of this rare condition, occurring in a patient, aged 57, who had had bladder trouble for five years, worse during the last year. Frequency, urgency and pain. Had lost 30 pounds in a year; looks aged, emaciated and cachectic. She had fre-

quent vesical hemorrhages. There was considerable tenderness over the whole hypogastric region, and considerable muscular spasm. No growth could be made out by palpation. Bladder capacity 50 cc. Cystoscopy unsatisfactory. Much thickening of vesicovaginal septum. Mucus and shreds of tissue could be washed out of the bladder. Examination under anesthetic discovered a mass in the pelvis the size of a man's fist, probably the bladder. Operation not advised. Autopsy showed the bladder to be filled with a new growth, which infiltrated the bladder wall, but did not involve any other organ. Kidney pelvis dilated and cortical substance in large part absorbed. Ureters dilated. No metastases found in any other organ. Microscopic examination proved it to be a spindle-celled sarcoma.

A NEW METHOD OF PERFORMING PERINEAL PROSTATECTOMY.—Hill (*Med. Index-Lancet*, June, 1907).—The author proposes, with the following technique, to overcome the necessity for incising the membranous urethra and its surrounding muscle, the compressor. A Roser's sound is first introduced into the bladder; an inverted V-shaped incision is made with the apex in the median line. The sphincter ani is then separated from the perineal center, and the finger introduced beneath the triangular ligament up to the apex of the prostate. The sound is then turned around to face the finger, and its point forced out at the junction of the prostate and the urogenital trigone. The sound is then withdrawn, the finger introduced through the puncture into the prostatic urethra, and the prostatic lobes loosened and removed in two parts. A tube is inserted into the bladder for drainage, a small amount of gauze packed around it, inside the prostatic capsule. The sphincter ani is reattached to the perineal center, and the wound partially closed, the tube emerging through the left lower angle. The writer finds with this technique, that disagreeable feature of many perineal prostatectomies, viz., incontinence, is overcome; that the patient has good control within a day or two after the removal of the tube, all the urine passing through the urethra after the ninth day, and healing takes place rapidly.

THE TREATMENT OF INFECTIOUS PYELONEPHRITIDES.—Juy (*Amer. Jour. of Urology*, June-July, 1907).—After a thorough consideration of the subject, the author gives the following conclusions: Simple infectious pyelonephritides can usually be cured by sufficiently prolonged medical treatment. It is consequently necessary to look for the symptoms in order to make as early a diagnosis as possible. It is by a systematic examination of the ureter in its abdominal course, as well as in its passage through the pelvis, that pyelorenal infections are to be detected. The painful points (subcostal, paraumbilical), the sensation of a large and painful ureter ascertained by vaginal examination, painful spots on the prostatic cornuæ, uretero-vesical and pyelo-vesical reflexes, associated with pyuria and nocturnal pollakiuria, form a clinical complex described by Bazy, which will allow one to make sure of the existence of a pyelonephritis. Medical treatment includes hygienic measures and diet. As long as pus-cells are present in the urine the patient should be kept in

bed on an absolute milk diet. Balsams may be useful, but, at the present time, there is a tendency towards the use of internal antiseptics; salol and especially urotropin and helmithol have given really remarkable results. And lastly, in certain cases, the medical treatment is to be completed by hydrologic medication. The amelioration and cure of simple pyelonephritides are announced by the disappearance of the painful points along the ureter, the cessation of the nocturnal pollakiuria and pyuria. In the pyelonephritides with distention, the indication for operation is, above all, furnished by changes in the general health, the persistency of the pyuria and the increase and size of the kidney. All surgical interference in cases of septic retention should be preceded by an examination as to the functional value of both kidneys. In the first place it is useful to study the total urinary depuration by the classical procedures, such as distological and chemical examination, cystoscopy, etc. These procedures are afterwards applied to the study of the urine coming from each kidney, collected either by ureteral catheterization or segregation. Nephrostomy is the operation of choice in septic pyelorenal retentions. Lumbar fistulæ, which persist, being kept up by an incomplete retention, should be treated by secondary interferences; lateral anastomosis of the ureter to the renal pelvis, resection and transplantation of the ureter, or orthopedic resection of the kidney, will result in a cure. From the progress accomplished in conservative surgery of the kidney, secondary nephrectomy presents very limited indications. The pyelonephritis of pregnancy, on account of its particular evolution, should be treated medically, and surgical interference of the kidneys is only indicated after removal of the fetus. Labor should be induced only in rare exception.

SUPRARENAL HEMORRHAGE; AN UNUSUAL CAUSE OF SUDDEN DEATH.—Munson (*Jour. of Am. Med. Assn.*, July 6, 1907).—A very interesting case of this kind is reported by the author. The patient, aged 25, had been subject to attacks of epilepsy. When first seen, his condition was described as feeble-minded. No abnormalities were noted at the physical examination, except stigmata of degeneration. He failed progressively for five years, when he was described as a filthy, idle idiot, in good physical condition. Seven days before death occurred, he had another attack, and fell. He was put to bed, and it was noted that he had a profuse diarrhoea. The diarrhoea continued and was uninfluenced by treatment. He was able to be up and around part of the time, though he appeared to be growing weaker. A short time before death occurred, he had walked to the bath-room, was given a bath, and his condition was about the same as it had been for several days. A few minutes later, however, he grew very weak, pulse weakened and respiration grew very shallow. He sank into a comatose state, which was shortly followed by collapse and death. At autopsy, hemorrhage was found in both suprarenals.

Suprarenal hemorrhage is common in still-born and very young infants. In young children, the hemorrhage is often accompanied by purpuric eruption, with fever, sometimes convulsions, suggesting an acute exanthem. In adults, the condition is much more uncommon. Males are more commonly affected than females, and the right side than the left.

or, in the case of the not uncommon bilateral lesions, the right side is more extensively involved. Nothing positive is known as to the etiology of the condition. Various hypotheses have been advanced, such as trauma, changes, weakening of vascular wall, stasis and thrombosis of the suprarenal vessels.

The case here presented is one of sudden collapse and death during a severe but supposedly not dangerous enteritis. The patient had for some years been subject to epilepsy. Both suprarenals were completely hemorrhagic, and the other organs showed marked congestion. One is led to believe that death was due to circulatory failure, caused by the sudden removal of the tonus producing secretion of the suprarenal glands.

TUBERCULOSIS OF THE TESTICLES.—Keyes (*Annals of Surgery*, June, 1907).—From his observations upon the histories of 100 patients, the writer draws the following conclusions:

1. Testicular tuberculosis is clinically never an isolated lesion. It is only one feature of a general genital tuberculosis.
2. Sterility is frequent if not constant, at the time the first testis is invaded.
3. There is evidence at this time of inflammation of the internal genitals.
4. Relapses in the opposite testicle occur within a few years, in eight or nine out of ten cases, and
5. Such relapses are in no wise postponed by an early removal of the diseased testis. Moreover, though suppuration seems often to result in permanent cure of the local process, and
6. Though a chronic focus several years old is likely never to suppurate, yet
7. In no case can one feel certain of a real cure unless the tubercular epididymitis has been removed. Now,
8. The demoralizing effect of epididymectomy is not to be compared with that of castration, and
9. Slight tuberculosis of the testis may be depended upon to heal spontaneously after removal of the epididymitis.
10. Hence, epididymectomy is the radical operation of choice, unless there is hyperacute generalized epididymo-orchitis, or unless the testis is destroyed by suppuration.
11. This operation has a beneficial effect upon the general health and upon tuberculosis of the internal genitals.
12. It should, therefore, be performed early in the disease. This, in spite of the fact that
13. Tuberculosis of the testis is often but an insignificant part of a generalized progressive tuberculosis, or
14. Is, for many years, the only active lesion of the disease.
15. If the patient is sterile, it would probably be wise to remove both epididymes, even though only one side is diseased.

OBSTETRICS AND GYNECOLOGY.

IN CHARGE OF

HUGO EHRENFEST, M. D.

PHTHISIS PULMONUM AND ABORTUS PROVOCATUS.—P. J. de Bruine Ploos van Amstel. (*Beitragte zur Klinik der Tuberkulose*. Bd. VII, H. 2).—*Is pulmonary tuberculosis an indication for the artificial inter-*

ruption of pregnancy?" is the simple question, to which the author of this very instructive paper attempts to furnish "a clear and precise answer." The answer is in the affirmative, and almost a hundred pages are taken up with the arguments advanced by the writer in defense of his position in this problem. The question is considered in all its aspects, including the moral and legal, numerous and extensive quotations are cited from the literature of the world, and each quotation, each cited opinion, is subjected to a sharp critical scrutiny. The final deductions of this essay undoubtedly are based upon a very careful consideration of an enormous material, and therefore, demand the attention of every physician who may be called upon to pass judgment concerning the proper mode of procedure in a case of pregnancy complicated by a pulmonary phthisis.

A study of the laws of most European countries reveals the unsatisfactory condition that in most instances no distinct provisions are made that the physician who performs an abortion for medical reasons in an attempt to save the mother's life is exempt from punishment. The writer advises strongly such changes which will make this point absolutely clear.

In next taking up the purely medical side of the problem, the essayist first endeavors to formulate an answer to the question: "*Does tuberculosis show an untoward effect upon pregnancy?*" Practically all authorities agree that such a harmful effect is exerted. While most writers believe that abortions and premature births are very frequently caused, Ploos thinks that this result is not very common, at least, not in the early stages of the disease.

More difficulty is encountered in furnishing a definite answer to the second question: "*What is the condition and future of children borne by these mothers?*" In a few well authenticated cases children have been born with unmistakable signs of a tuberculosis acquired during intrauterine life. Theoretically a direct germinative infection of the ovum through an infected spermatozoid, like in syphilis, might be assumed, but the existence of this mode of infection never has been established. A placental transmission of tubercle bacilli is possible, but certainly is a rare occurrence. Of greater practical importance is the increased predisposition for infection of children issuing from tuberculous parents, and the increased risk of acquiring the infection by the close association with their diseased parents. A hereditary predisposition for tuberculosis is almost generally conceded. The imminent danger existing for these children of acquiring the infection at home is well illustrated by such observations as made e. g. by Bernheim. In three sets of twins he permitted the respective mothers to nurse one child of each set, while the other was turned over to a wetnurse. All three babies nursed by their own diseased mothers died, while the three others survived.

The essayist comes closer to the main topic of his paper with his third and fourth question: "*Have pregnancy, labor and the puerperium a harmful effect upon the course of a pulmonary tuberculosis, and if so, does this fact justify abortus provocatus?*" In general it can be stated that such a harmful influence does exist; it is more pronounced in labor and during the puerperium than in the course of pregnancy. The essayist is

willing to accept Kaminer's *dictum*: "Almost always it means misfortune for a tuberculous woman to become pregnant." A woman predisposed to tuberculosis may develop an acute phthisis during pregnancy, but more often she does in the puerperal state. The practical conclusions to be drawn from these facts are the following: It is the duty of the physician to warn a tuberculous girl against marriage. Ploos regrets the fact that European countries do not possess laws prohibiting the marriage of persons suffering from tuberculosis, and points with envy to the advanced position taken by some of the United States. A married woman must be warned against impregnation by advising facultative sterility. If the physician is consulted after impregnation has occurred, he must inform the prospective mother of the fact that her pregnancy must be regarded as a serious complication of her tuberculosis, and should advise immediate interruption of pregnancy. Since with the advance of both the disease and pregnancy the danger proportionately increases, the indication and justification for artificial interruption of pregnancy are most evident in an early stage of both the disease and the pregnancy. But the indication for abortion undoubtedly also exists in far advanced cases of tuberculosis. If the mother is in an entirely hopeless condition, premature birth may be resorted to in an attempt to save a viable fetus. It may be emphasized that the essayist repudiates the restriction made by some writers to the effect, that artificial abortion should be performed only after a deterioration in the mother's condition has become noticeable. He defends his radical position by his observation that for children of tuberculous mothers the chances to be born healthy and strong are very slim.

The author's fifth question reads: "*Does abortion check that rapid progress of the phthisis for which pregnancy is held responsible?*" The answer is not very precisely given, but if we understand correctly the writer's idea, we would formulate it as follows: Abortion positively checks the progress of the disease in some instances, but it certainly always removes a decidedly injurious factor. Of course, if pregnancy is interrupted very late, the harmful influence was potent for a long time, the patient is in a bad condition and the immediate harmful effect of labor itself may upset the possible beneficial effect to be expected from the interruption of the pregnancy. All these arguments then would speak in favor of early abortion.

The writer finally propounds his last question: "*Which method of abortus provocatus is the least dangerous to the patient?*" Certainly a method which does not call for the use of a general anesthesia. For early abortion Ploos recommends the method of Oehlschlaeger, which consists in the injection of 3 or 4 grams of tincture of iodine into the uterine cavity. This injection, if possible, should be made a few days after the expected menstruation has not appeared. If done in later months, it should be accompanied or followed by a curettement. An abortion in the third and fourth month requires the instrumental dilatation of the cervix for the introduction of two fingers. The ovum is freed and expressed, then the uterine cavity curetted.

[This essay strongly defends the author's position that in every case of

phthisis every pregnancy should be interrupted as early as possible. Theoretically, he seems right, but "*Is this radical position applicable to practice?*" would seem to be one more important question worth considering. "Almost always" pregnancy does affect the course of a pulmonary tuberculosis, but in some instances this injurious influence is entirely lacking. The interruption of pregnancy in such a case, however rare, could hardly be defended with any arguments. In practice the physician can approach every case of pregnancy in a tuberculous woman with the *theoretical* justification of artificial abortion, but his *actual* justification will be dependent upon the proof that the intercurrent pregnancy does aggravate the course of the disease, and is likely to endanger the patient's life. So that, after all, each case will have to be considered upon its own merits. Our decision, however, will, of course, be influenced by the fact, forcibly brought out in this article, that in certain cases much can be gained by an early interruption of pregnancy.—Editor].

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

INFANTILE SCURVY.—La Fetra (*Amer. Jour. Med. Sci.*, June, 1907), discusses the symptoms of infantile scurvy with illustrative cases. He lays great stress on the fact that the differential diagnosis may be very difficult at times, and calls attention to the following diseases which may cause confusion:

Rheumatism—Rare under two years of age. Almost unknown under one year. In scurvy there is usually no fever or local heat in the swelling part, and the swelling is along the shaft of the bone instead of in the joint.

Rickets—The intense pain, swollen, bleeding gums and tendency to hemorrhage, will indicate scurvy even with coexistent rickets. Proper treatment is also of aid, because the scorbutic symptoms disappear at once.

Arthritis—Gonococcic, septic, or pyemic arthritis must be considered. Diagnosis to be made by careful physical examination, and by the fact that the swellings are rare in the shafts of the bones.

Anterior Poliomyelitis—The gradual development of disability, the enlargement near the epiphysis, the tenderness and the fact that the foot and leg can be moved even though reluctantly, speak for scurvy.

Syphilitic Epiphysitis—The preference of syphilis is for the upper extremities, while scurvy usually affects the lower. Moreover, the characteristic eruption of syphilis is absent, while the bruise-like marks, the petechiæ and the swollen gums of scurvy are present.

Sarcoma of the Femur with Unilateral Swelling—Difficulty in diagnosis may arise, and many cases of this sort have been operated on for sarcoma. The tenderness of the other limbs, together with the swelling of the gums, will correct the diagnosis.

Purpura is to be distinguished by the absence of swelling of the long bones and of tenderness in the shafts of the bones.

Nephritis—Since albumen with blood in the urine may be the first, and for a time, the only sign of scurvy, the diagnosis of acute hemorrhagic nephritis has been made. The feeding history, together with the absence of fever, should make one suspicious. Careful examination will frequently show some of the other signs of scurvy.

Ileocolitis—The absence of fever and of mucus and feces mixed with the blood and the otherwise normal stools will make one cautious about the diagnosis until changes in the legs and gums occur.

In all the above cases if the diagnosis is uncertain the effect of treatment is of the greatest value, inasmuch as the results show in 48 hours, and no harm can be done by waiting that long, as a rule. As the author puts it, "If in doubt, when the baby cries, when the diapers are changed or the stockings removed, stop the sophisticated food and give raw milk and orange juice."

CARBOLIC ACID POISONING BY RECTAL INJECTION.—Acker (*Arch. of Ped.*, May, 1907) reports two cases of children, aged respectively six and three years, in whom rectal injections of a teaspoonful of carbolic acid to the pint of warm water produced typical symptoms of poisoning with coma and black urine, followed by extreme prostration. In one case the injection was given for seat worms, ordered by the father of the child (not a medical man). In the other case carbolic acid was used by mistake, instead of boric acid, which had been ordered. In both cases, there was no doubt that the acid was not mixed with water, and being put into the bag of the syringe so that the acid settled to the bottom, the children received the poison with the first ounce or two injected. It is noteworthy that in both cases the toxic symptoms came on within a few minutes of the injection.

CONCERNING THE USE OF DRIED MILK AS AN INFANT FOOD DURING THE SUMMER MONTHS.—Hussy (*Arch. f. Kinderheilk.*, Vol. 46, page 63). --There has been much interest of late in the question of milk dried in vacuo to a powder to which water is added to form a food for infants. It has been shown that this milk powder is practically sterile, and that when properly diluted it approximates cow's milk in its constituency very closely. Many experiments have been made here in America with reference to this dried milk, particularly in New York City, under the leadership of Magill. It is, therefore, of interest to note that Hussy has made a series of investigations with reference to the use of this dried milk in infant feedings in the series of well and sick children in his polyclinic. Various forms of digestive disturbances were treated in this way. While his report does not lend itself to abstract in all its details, his conclusions are of a certain interest. He finds that dried milk is not a perfect substitute for fresh cow's milk in the case of infants who have passed through a disturbance of the gastro-intestinal tract, but that a considerable proportion of such cases seem to have done very well on the food. It appears to the author that in some cases there were bad

results, possibly to be attributed to the fact that the dried milk used was too rich in fats. He is unwilling to say that this food may be safely substituted for cow's milk in all cases during the summer months. Nevertheless, he believes that where milk of good quality cannot be obtained, this dried milk may be a valuable surrogate. He believes that the dried milk may be of a special value for short periods of time, and that it may be used to advantage as a temporary food when infants are traveling. He also believes that if this dried milk could be prepared with less fat, better results might be obtained.

MEASLES SUPERIMPOSED ON SCARLET.—Eaton (*Arch. of Ped.*, May, 1907) reports a case of a child of 5 years, who developed a typical scarlatinal rash. Three days later this rash was fading distinctly, yet the temperature ranged between 103 and 104 degrees, and a rather harsh cough was beginning, though there was no especial coryza. On the evening of this day, a typical measles rash was very pronounced over the entire body, while the throat showed simply a diffuse redness. Two days later, the rash of the scarlet fever was much faded, and the measles rash much more evident by contrast. In two days more, the measles rash began to fade also. There was an evening rise of temperature for 4 days longer. A double desquamation occurred, that of the measles occurring first, while the characteristic peeling of scarlet occurred about ten days later. There were no complications. It is noteworthy that there were no preliminary exanthemata, Koplik's spots being carefully looked for, but not found. In the discussion which followed the reading of this report, three other men reported cases of measles, superimposed on scarlet fever, one man being able to report several cases. The possibility of this double infection is therefore to be borne in mind.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

ARCHIVES OF NEUROLOGY. THE PATHOLOGICAL LABORATORY LONDON ASYLUMS, CLAYBURY, ESSEX. Vol. III, Edited By F. W. Mott.—Volume three of this notable publication contains papers of the very greatest and widest interest. It might be well in this department to take note from time to time of the work that appears under the authority of this publication and to indicate by brief abstracts the character of the work which is being done in the laboratories of the London County Asylums. A large part of the work is done by the editor himself, F. W. Mott, and the unusual interest that attaches to his work is due to the fact that not only is he the pathologist in charge of the laboratories but he is likewise neurologist to the in and out patient department of the Charing Cross Hospital. He represents in an unusual degree the clinico-pathologist whose interest in nervous and mental disease is based upon

this double view point. His deductions are always supported both from the clinical point of view as well as from the post mortem studies. Certain papers are selected for abstract rather with an idea of giving some hint of the work done than with any desire to offer a complete resume of the volume under consideration.

DIPHTHEROID ORGANISMS IN THE THROATS OF THE INSANE.—Eyre-Flashman (*Ibid*).—This is an investigation planned to determine the correctness of the theory advanced by Ford Robertson. The theory assumes that dementia paralytica is caused by the action of a specific organism, a member of the Klebs-Loeffler group, which is present in the tissues of the subject of this disease. Its specific power arises from the fact that owing to some antecedent disease the resisting power of the organism as a whole is overthrown, thus causing an invasion of the body tissues and producing the pathological changes and clinical symptoms which we recognize as dementia paralytica. Some of the causes which lead to the lack of resistance are alcohol excesses, syphilis, etc. Robertson as may be remembered gave to this specific organism the name bacillus paralyticans. The investigation concerns itself with the attempt to find out if the organisms of the diphtheroid group were any more frequent in the throats of dementia paralytics than with other persons. They combined with this the attempt to determine the frequency of the real diphtheria bacillus in the throats of the dementia paralytics in comparison with other individuals. The following conclusions are noted: That the percentage incidence of all diphtheroid organisms in the throats of the insane 17.3 is not in excess of that noted in the sane population outside the walls of an asylum. That the percentage of incidence of genuine diphtheriae in the throats of the insane is smaller still and compares well with that of the healthy sane. There is no evidence to show that the bacillus of this disease is more common in the throats of dementia paralytics than in the throats of other forms of mental disease. As a result the authors are unable to trace any connection of a causal nature between bacillus diphtheriae and general paralysis of the insane.

ALCOHOL AND INSANITY. THE EFFECTS OF ALCOHOL ON THE BODY AND MIND AS SHOWN BY ASYLUM AND HOSPITAL EXPERIENCE IN THE WARDS AND POST-MORTEM ROOM.—F. W. Mott (*Ibid*).—This paper treats of this subject in a sane and objective way and aims to get at the root of the matter without any previous bias. This of itself gives the paper an almost unique interest. Mott seeks to avoid the dogmatism of the temperance advocate and at the same time avoids the carelessness of the therapeutic enthusiast in the food value of alcohol. The ward material of the Charing Cross Hospital rich in alcoholic subjects as well as the asylum material are fully utilized. The results of the post-mortem examinations in both institutions are used to correct the clinical conclusions. The material is large enough to enable the author to draw some general deductions which are of some interest and importance. Some of these conclusions may be stated as follows: The article as a whole is too detailed to admit of abstracting. The conclusions or rather opinions

are scattered here, and there throughout the body of the article. Some of them are worthy of quotation. He says that in fully one-fourth of the male cases and in a large proportion of the female cases alcohol is an important factor in the causation of disease. Many cases of psychosis accompanied by symptoms of polyneuritis are of undoubted alcoholic origin. Small quantities of alcohol are of especial importance in those subjects of an advanced age in whom exist already arteriosclerosis due to syphilis or to some other constitutional cause. The quantity of alcohol which is daily consumed by the pillars of society is quite sufficient to convert an epileptic or potential lunatic or certain feeble minded individuals into criminals or certifiable lunatics. On the other hand it is not a fact that alcohol is the only cause of the increase in insanity or its present apparent widespread development. Some intemperate writers would have it that without alcohol there would be no insanity. The author is inclined to the opinion that even were the consumption of alcohol limited to the utmost degree there would be no parallel decrease in the number of cases of insanity. He says that if an island might be set apart for total abstainers a high percentage of insanity would still exist there. Alcohol plays the part more and more in an indirect fashion, for example when an individual who has been an alcoholic and acquires syphilis, the infection is much more intractable and seems to be more inclined to attack the nervous structures than in other cases. The author has been struck with the few cases of alcoholic liver which was met with in the post-mortem room of the insane asylum as compared with its frequency in the hospital. He concludes as a result of these observations that only people with an inherently stable nervous system could drink long enough to acquire an alcoholic liver, the other classes become victims of mental affections one way or another and are thus prevented from consuming the required amount of alcohol. There is included in this paper several investigations in respect to alcohol in the production of disease. Of special interest is one on the role of alcohol in the etiology of epilepsy—179 cases of epilepsy in the Ewell colony were carefully studied with this end in view. As a result it was found that the predominant role that alcohol plays is that it has tendency to vitiate the stock and thus make resistance to disease less certain. In an individual of absolutely good nervous organization overindulgence in alcohol would not produce epilepsy. Such a person, however, would transmit a nervous system so weakened by alcohol to his offspring that in them even a minor amount of alcohol would be perfectly capable of producing epilepsy. Whatever opinion may be held on the subject of temperance in regard to alcohol, for the epileptic there is no such question, he should throughout his life regard it as a poison, having the power, even in small quantities, either to increase the severity of his malady or to light it up afresh if it has abated.

TWO CASES OF AMAUROTIC DEMENTIA.—F. W. Mott (*Ibid*).—An examination of two cases of amaurotic family idiocy confirm the clinical observations of previous observers and the microscopic results differ only in minor features from the published reports. The novel feature of

this study is that there is included a chemical examination of the brain substance. This is a part of the new work that is being carried on in the laboratory chiefly by Koch. As a result of the chemical study it was found that there was a decrease of nucleoproteid which may be associated with the disappearance of the Nissl substance in the neurons and likewise the increase of simple proteids which may be correlated with the increase of glia fibrils. The essential histological feature of this disease is a progressive loss of the Nissl substance of all the neurons of the body. The mode in which this substance disappears is progressively from the periphery of the neuron towards the nucleus in the center of the cell. It may therefore be assumed that the Nissl substance is the derivative of the nuclear biochemical interaction of the cell protoplasm and its lymph environment. The inference is that the profound affection in the physiological functions of the central nervous system which characterizes this disease may be especially associated with a biochemical change in the metabolism of the nucleus. The cause of this regressive metabolic metamorphosis may be an inherent lack of specific energy, racial or familial, of the neurons and possibly some hitherto undiscovered biochemical alteration of the blood or lymph.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

ECLIPSE SCOTOMA.—Aubaret (*Arch. d'Ophthalm.*, February, 1907).—Although defects of sight from exposure to direct rays of the sun were known to the ancients, the first exhaustive investigation of the subject was made by Aubaret and Lescarret in 1901. In the present paper Aubaret adds to our knowledge from the clinical aspect, concluding with an interesting and ingenious suggestion as to its pathology.

Complaint of visual defect is made within a few hours after observation by the naked eye of a solar eclipse. The scotoma is positive, well defined, circular, and in ratio with the size of the retinal image of the sun's disk. At 20 metres it is sufficiently large to embrace the whole area of an individual's face; at the punctum proximum it is about 2 mm. in diameter; an irregular trembling of the scotoma is a constant phenomenon and is probably due to efforts to evade the defect in the field. Sometimes the scotoma is paracentral in which case it is always displaced slightly upwards and to the right of the fixation point; metamorphopsia is common; color vision and perimetric field are unaffected; occasionally an evanescent conjunctivitis is an associated symptom.

Aubaret thinks that ophthalmoscopic changes are generally conspicuous by their absence, or when present are of the slightest and due to edema. Slight cases rapidly get well. Even in severe cases improvement is common. The patients experience little permanent embarrassment, as usually only one eye is damaged. One patient seen twenty-eight years

after onset in the right eye was a good shot from the right shoulder; he made use of his scotoma to discharge his weapon when the "sights" and mark became invisible.

To protect the retina against injury by light the eye diminishes the palpebral fissure, contracts its pupil and throws a pigment curtain over the rods and cones by means of the amoeboid processes of the hexagonal cells of the retina; each of these protective mechanisms Aubaret regards as a true reflex phenomenon, and in the case of the last named the reflex arc is discussed. When the intensity of light passes the limit against which these reflexes can protect the retina, each cell of the retina has to take its own defensive measures, which consist, as in unicellular organisms, in a withdrawal of its processes; if the injurious stimulus is extreme, such retraction becomes permanent and the neurone chain is irremediably broken. Congestion or edema of the retina, when present, is regarded as a further reflex of vaso-motor character. Such an explanation Aubaret considers capable of application to all degrees of eclipse scotoma, and therefore the more worthy of acceptance; he believes also that it accords closely with cases of sudden deafness due to intensity of sound vibrations.

CAVERNOUS SINUS ANEURISM CURED BY A NEW METHOD AFTER FAILURE OF THE USUAL OPERATION.—Burghard and Pritchard (*Ophthalm. Soc. United Kingdom, Oph. Review*, May, 1907).—In 1901 the patient had a fall, followed shortly by the signs of cavernous sinus aneurism. Ligature of the right common carotid was followed by recurrence of symptoms immediately on getting up. Four years later the right eye was proptosed 3 mm., the conjunctiva was injected and there was pulsation of the globe, though no resistance to backward pressure. The fundus was normal. A loud systolic murmur was heard over the right temporal and orbital regions and the vessels could be felt beating above the seat of ligature of the common carotid artery, and pressure in this region controlled the bruit. Muscular movements of the eye were good. The external and internal carotid arteries were tied with no permanent benefit, so that eventually the right angular vein was ligated. From this time onwards there was complete cessation of the symptoms with no recurrence, except a slight temporary one. It is pointed out that these cases are usually of the nature of an aneurismal varix and that the simpler operations, such as tying the angular vein, are more likely to effect a cure than any of the major operations; they often get well without any treatment whatever.

CORNEAL CHANGES IN A CASE OF MYXOEDEMA, PROBABLY DUE TO A DEPOSIT OF MUCIN IN FIBROUS TISSUE.—E. T. Collins (*Ibid*).—A female, aged 58, suffered from pain and inflammation in the left eye. Her health had been bad for seven months, and "her limbs were swollen and body getting larger." The skin was waxy looking, the neck was flattened in the region of the thyroid gland and the speech was slow and labored. Urine was normal. R. V. 6-6 L. V. 6-36, not improved.

In the left eye there was a slight ocular conjunctivitis and in the cen-

tre of the cornea a greyish haze made up of several small, discrete, globular looking grey dots in the anterior layers of the cornea; there were some elevations of the surface over the region of the opacity. The periphery of the cornea was clear; tension was normal and in all other respects the eye was healthy.

The globular appearance of the dots suggested that they might be drops of mucin deposited in the fibrous tissue of the cornea, as mucin is deposited in the skin and other structures in myxedema.

THE TREATMENT OF KERATITIS AND LAGOPHTHALMUS.—Francis (*Am. Med.*, April, 1907).—Francis describes an ingenious method of approximating the lids without the necessity for actual suture. "A piece of gauze is folded upon itself and a truncated triangular section is cut out, the folded side representing the truncated portion." This is done for both lids. One flap of each piece is cemented to its respective eyelid with flexible collodion; a silk thread with the free ends towards the outer canthus is placed in the creases and the free flaps are turned over and cemented to the fixed flaps, care being taken not to put collodion in the loops or on the thread. To allow room for traction on the lids the gauze is kept back a few millimetres from the ciliary margin. By tying the free ends of the threads the lids are held in position, but can be separated by untying the bow knot.

LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OF

W. E. SAUER, M. D.

THE TREATMENT OF HYPERTROPHIC AND INTUMESCENT RHINITIS WITH THE GALVANOCAUTERY.—Ingals and Friedberg (*Presented before the Section on Laryngology and Otology of the Amer. Med. Assn.*, Atlantic City, June 4-7, 1907).—The author's technique in the use of the galvanocautery, is as follows: The part is first anesthetized with a 4 per cent solution of cocaine guarded by small quantities of atropine, strophanthin, oleum caryophili and carbolic acid, which aid in the anesthesia and prevent constitutional effects of the cocaine. For the inferior turbinated bodies, a long, narrow cauterization is made, extending from the anterior to the posterior end, just deep enough to touch the bone along the junction of the middle third, either with the inferior or upper third, and the electrode being moved slightly backward and forward with a saw-like motion as the instrument is gradually drawn forward. The line of cauterization is swabbed over with a strong compound tincture of benzoin; then both nares are sprayed with an oil of cloves solution, and the side operated on is closed with cotton for four days; the cotton to be changed as often as is necessary. The patient is given an astringent powder and an oil spray to use at home. Occasionally, similar but much shorter cauterizations are applied to the middle turbinates, adopting the

submucous cauterization by means of a narrow electrode being run in at different points, and carried upward and backward 8 to 12 mm. under the mucous membrane. For the swelling at upper part of septum, oblique linear cauterizations are made down to the bone, about 5 mm. apart and 15 mm. long. Cauterization is not repeated until about 14 days, when the other naris is cauterized.

The authors conclude as follows: 1. That the galvanocautery properly applied is the treatment par excellence in hypertrophic and intumescent rhinitis, and that cures can be effected in more than 95 per cent of cases.

2. In cases complicated with deviations or exostoses of a slight or moderate degree the cauterizations of the turbinal bodies will be sufficient to bring about complete relief without the necessity of performing operations on the septum. The advantages to the patient in the avoidance of expensive, prolonged and tedious operations, pain, and subsequent discomfort, can readily be seen.

3. The dangers of middle ear infection have been greatly exaggerated, only one case among several thousand cauterizations, and that not in the list of those published, having come under our observation.

4. The liability to adhesion formation is not great, provided sufficient care is taken not to injure the opposite septal mucous membrane and provided that when the subsequent swelling is marked a probe be passed between the opposing surfaces the fourth or fifth day.

5. A 4 per cent solution of cocaine, according to the formula published, is sufficient in the vast majority of cases to induce a complete local anesthesia; three to six applications on a cotton-wound flat applicator being sufficient for this purpose. As a result of experience, especially where there is marked intumescence, we believe that a spray of adrenalin chlorid or suprarenalin, grain .1 to the ounce, materially assists in producing anesthesia.

6. The objection that the galvanocautery destroys too much mucous membrane is not valid if the cauterization is linear and is done properly; indeed, we believe that the full area of healthy mucous membrane is left by this method.

7. Scab and crust formation does not occur any oftener following cauterization than after other nasal operations; in fact, it was noted in but very few instances and in some of these a change in the spray solution caused a cessation of this trouble.

8. No packing is needed to prevent hemorrhage.

9. There is very little, if any, pain after galvanocauterizations of the turbinated bodies.

THE RELATION BETWEEN DISEASES OF THE TONSILS AND ENLARGEMENT OF THE CERVICAL GLANDS.—Campbell (*N. Y. Med. Jour.*, May, 1907).—The author states that the tonsils and glands of the neck are closely related through the lymphatic vessels and that in diseases of the tonsils the infection is carried to the cervical glands, which serve as barriers against general systemic poisoning. This relation has been demonstrated by both normal and pathological physiology.

Lymphatic glands are probably enlarged in all infectious diseases, and

they enlarge some days before the onset of active symptoms; this is a reliable indication that an acute infectious disease is incubating. Isolation at this time would probably prevent the spread of the suspected disease. In measles, the glands are enlarged some days before the Koplik's spots appear. In scarlet fever, when a mixed infection through the tonsils is frequently found, suppuration of the cervical glands is not uncommon.

In these infections, when a child is exposed to and contracts the disease, the bacteria or their toxins are carried at once through the tonsils into the lymphatic system, and in three or four days the glands begin to enlarge. Experimental inoculation demonstrates that tuberculosis of the glands of the neck is of bovine origin, the result of absorption through the tonsils.

The author concludes by saying, that diseased tonsils are in themselves not only perilous to the individual, but a great menace to the cervical glands and contiguous parts, and that if tonsils and adenoids were more often removed, infectious diseases, including tuberculosis would be more infrequent.

MEDICAL LAW AND MEDICAL JURISPRUDENCE.

IN CHARGE OF

IRVIN V. BARTH, LL. B.

LIABILITY OF FATHER FOR SERVICES RENDERED SON: MEASURE OF VALUE OF SERVICES.—*Morrell vs. Lawrence (Supreme Court of Mo., 1907), 101 S. W. 571.*

Plaintiff sued on an alleged implied contract of defendant to pay him the reasonable value of his services as a physician rendered to defendant's adult son at defendant's request. The defendant, Doctor Lawrence, and his son, Frank, had been for some time residents of the City of St. Louis, and during that time plaintiff had been called upon to render professional services to Frank, who had always paid the bills on account of such services. Father and son later moved to New York City, where the plaintiff had been called upon to continue his services to the son. There had been some dispute in reference to the payment of the services rendered the son on one occasion in New York City, Doctor Lawrence having repudiated the contract, and the son having paid an amount less than the aggregate of the bill rendered. On May 31st, 1902, while the father and son were living in New York City, plaintiff received a telegram from defendant in the following words:

"Frank is quite sick. We would like to have you come and treat him. Leave on noon train Sunday, via Big Four. Answer at once."

Plaintiff answered June 1st:

"Will leave on Big Four at noon to-day."

At the New York station plaintiff was met by a messenger of Doctor Lawrence, was conducted to the Lawrence home and attended Frank constantly until Frank's death, on July 9th. Testimony as to the value of the services rendered varied from \$300.00 to \$1,000.00 a day. The amount of the bill sued for was \$16,000—\$400 a day for forty days. Verdict for plaintiff for \$12,666. Defendant's motion for a new trial on the ground of error in instructions and excessive verdict was sustained. Plaintiff appealed. The court held in substance the following points:

First, there was ample evidence to take the case to the jury to determine the implied contract that Doctor Lawrence intended plaintiff to understand, and that plaintiff did understand that he would pay for the services, which the telegram called the plaintiff to render; secondly, the fact that the defendant in the case was a man of means and wealth, was not an element in determining the value of the services, and, hence, the amount to be awarded, and thirdly, in such a suit for the value of services, evidence of the plaintiff's good reputation in the community as a physician is inadmissible to show the value of the service rendered. The order granting a new trial was affirmed.

NOTE:—In the issue of this Journal of October, 1906, Vol. 13, No. 10, at pp. 841 to 843, there was discussed in connection with the case of *Hays vs. Wabash R. R. Co.*, (1906), 95 S. W. 299, the law as to the liability for services rendered to another, as developed in the State of Missouri. It was there noted that under the ruling in the case of *Meisenbach vs. the Southern Cooperage Co.*, (1891), 45 Mo. App. 232, the defendant was not liable to the plaintiff physician, who attended an injured employee of the company, although the Superintendent of the defendant sent a messenger to the plaintiff requesting his services. Likewise was it there noted under the decision of the court in *Rankin vs. Beale*, (1897) 68 Mo. Ap. 325, that there was no liability resting upon the father to pay for the services rendered his son of full age, although the father sent for the physician to attend his son; the court saying:

"It has been repeatedly held that a mere request from a father to a physician to attend a child of full age, and though sick at the father's house, raises no implied promise upon his part to pay for such medical services."

But it will be further noted in the article referred to, in commenting upon those cases, that the following observation was made:

"The application of the rule in any particular case is limited to the reason for its existence. Whenever it may be fairly inferred that the person requesting medical aid intended to pay therefor, and the physician so understood it, a liability will attach to such person when the services so requested may have been rendered."

The principal case illustrates most aptly the modification suggested in the above to the rule of law applied by the courts in the *Meisenbach vs.*

Southern Cooperage Co. and the *Rankin vs. Beale* cases. It was held that the evidence was sufficient to justify the jury in finding an implied contract on the part of the defendant, Doctor Lawrence, to pay for the service rendered his son. The court said:

"We think the evidence for the plaintiff in this case tends to prove a condition of affairs from which the triers of the fact, if they should see fit to draw the inference, might, with reason, do so, that Doctor Lawrence intended the plaintiff to understand, and the plaintiff did understand, that he would pay for the services which the telegram called the plaintiff to render. This was not a call on the plaintiff for services in the field of his daily work. It called him away from his established field of action. It called him, in effect, to resign his practice, to dedicate himself for the time being solely to the service of the defendant's son, whatever the consequence might be to his general practice. This is altogether outside of the category of the cases above referred to. The patient was not one of 20 or more for whom the physician might prescribe in a day. He was one for whom the physician must give up all other patients. The call was a very unusual one, and it involved unusual financial consequences. * * *

"The telegram is to be interpreted in the light of the relations of the parties, and of their past transactions with each other. Whether in that light, the defendant had reason to believe that the plaintiff would understand the telegram to imply an agreement to pay, and plaintiff did so understand, were questions for the jury under proper instructions, and if the jury should so find, the verdict should be for the plaintiff."

The following doctrine from Wood on "Master and Servant," was relied upon by the defendant's counsel:

"The rule is that, in order to render one liable for services rendered at his request, they must be rendered for his benefit, or under such circumstances that the person requested to render them was justified in understanding that they were for his benefit or upon his credit. But if the person performing the services knows they are not for the benefit of the person making the request, and that he is under no legal obligation to pay therefor, he cannot predicate a claim against him, unless he expressly promised to pay for them before the services were rendered."

In answer to this, the court said:

"That is a correct statement of the general rule of law on that subject, but it is not of invariable application. We see no objection to applying it to the case of one calling a physician to a suffering stranger, when there is nothing in the situation to suggest to the physician that the man calling him has any deeper interest in the case than the prompting of common humanity; and we see no objection to applying the rule to the case of a father calling a physician to wait on his son, if

the son is of age and living to himself, and if there is nothing in the conditions to indicate that the father is taking upon himself anything more than the office of messenger for his son. But there is something more than the dictates of common humanity between father and son, and the fact of that relationship is to be considered in connection with other circumstances, if there are circumstances, indicating to the physician that the father called him on his own account to serve his son."

As to the second point decided, the court held that the plaintiff could not show to the jury the defendant's wealth as an element "to be taken into the account in the measurement of the value of the services, unless it is in rebuttal of evidence from the other side attempting to show the custom of a lower standard."

"If the defendant should introduce evidence to show that the plaintiff for similar services was accustomed to charge smaller fees than those sued for, the plaintiff would have a right to show, if such was the fact, that the smaller fees were charged to poor men because of their poverty, but that the defendant's financial condition justified a charge for fair and reasonable compensation. In the case at bar, there was no effort on the part of defendant to prove that the plaintiff or other physicians were in the habit of charging smaller fees for like services. Hence, there was no occasion for rebuttal evidence to show that smaller fees were charged out of consideration for the poverty of the patients, and that defendant's financial condition did not entitle him to that indulgence. Instruction No. 3 did not cure the error in this respect of instruction 2. It justified the jury in believing that there was a difference between the reasonable value of services rendered a rich man and those of the same kind rendered a poor man. There is no such difference."

Finally, with reference to the third proposition, wherein it was attempted to show the plaintiff's good reputation in the community as an element affecting the value of services rendered, the court said:

"The plaintiff's general professional reputation was not drawn in question, and the jury had no right to consider it in estimating the value of the services. The plaintiff's professional reputation in the community would doubtless have some influence on the amount of income derived from his practice, and if that was in dispute, and if he was suing for loss of income caused by absence from home in the service of defendant, evidence of that reputation would be admissible. But there was no question of that kind in the case. The plaintiff testified that his income was \$6,000 to \$10,000 a year, and there was no dispute of that. * * * *

"It was competent for the plaintiff to show that he was a physician of learning and skill, and that fact should be taken as an element in estimating the value of the services rendered; but the plaintiff's general reputation as a physician had no more to do with the case than his general reputation as a man."

CORRESPONDENCE.

PHILIPPINE LETTER.

[FROM OUR OWN CORRESPONDENT.]

Conditions here in the islands vary largely with the locality, hence one never finds universal prosperity or adversity. In a general way the lot of the average native is probably as good as it was under Spanish rule, but no better. In some parts of the islands the people have a hard task to keep body and soul together, while in others, especially in the hemp producing localities, a living is easily made. Stripping hemp ordinarily yields a man from 25 to 40 cents a day. If the people marketed their own hemp there would be a much larger profit, but since the average *tao* lives from hand to mouth and must have his money on the spot for immediate needs, whenever he has accumulated a hundred pounds or so of hemp, it goes into the hands of the nearest chino, who keeps it in storage and finally markets it at a good profit. Each little village or barrio, no matter how small, has one or more Chinese who are always ready for a bargain and who have invariably the business capacity to see one. The Chinese have been in the islands for hundreds of years, no one really knows how long, and they are the real business people of the Philippines. Inter-marriage with the natives is naturally common, indeed a large proportion of the natives in some parts of the archipelago show the Mongolian strain. The Chinese *mestizos* or half breeds seem to combine whatever virtues the Filipino may have with the shrewdness and sharpness of the Chinaman, and although as a rule hated by the Filipino, they always show the capacity to succeed. The Japanese, on the contrary, never seem to have made much headway and are not very prominent in the business of the islands.

At the time of writing, the islands are at peace and in those having a Christian (so-called) population, civil government reigns or is supposed to reign. In two of the islands of the Visayan group, however (Samar and Leyte), a state of general disturbance has prevailed for more than a year, due to what is known as "Pulajaneism." The natural habitat of the Visayan is on or near the coast and to a greater or less extent he is a seafaring person. Certain of the people have, however, elected to live in the mountains, sometimes because they are "wanted" for misdemeanors or crimes, sometimes because of feuds, but probably most often because they wish to avoid taxation with its annoyances and petty graft. Your ignorant citizen *tao* goes our Revolutionary hero one better and instead of "No taxation without representation," with him it is "No taxation at all." I think he cares little about representation; what he really likes is to be looked after, and a wise if even a severe paternalism, albeit

not savoring of our cherished belief in democracy, is, I believe, far more to his liking than representation which does not represent. I recently asked an intelligent native if he thought the state of unrest in Leyte and Samar was at all due to political reasons and if the forthcoming Philippine Assembly would cause it to cease; his reply was: "What do these people know or care about the Assembly?" I am speaking of present and average conditions now and of what I believe would be a more successful way of administering the affairs of the islands with justice; no one can tell, naturally, what course the future may show to be advisable.

The Pulajanés live far back in the most inaccessible parts of the mountains and our army, on account of the difficulty of following them, has had much trouble in stamping out this lawless organization; for an organization it undoubtedly is, a loose one perhaps, but having its generals, colonels, captains and lieutenants, and issuing various and complicated orders to its followers. The Pulajanés have a uniform of blue with a red facing and in one of their captured strongholds I once saw an American sewing machine upon which a few hours before uniforms were being manufactured. The trouble in the past has been that these people not being able to live upon what they could raise in their camote patches, were forced to get food from the coast towns, and believing that might made right, at intervals they swooped down and raided the different *barrios*. As a rule they killed few if unopposed, but contented themselves with carrying off the edibles in town and often a few temporarily made slaves for pack animals.

General Wood has threatened, it has just been reported, that unless the Army is given full swing, he will withdraw the troops from the field and let the civil authorities work out their own salvation. The trouble seems to have been that the civil authorities have opposed giving the Army full power to act in suppressing the outlaws and have wanted it to be a sort of additional police force. Most officers contend that until the seat of disturbance is put under military control the situation will continue, since military authority cannot be maintained while hampered by superseding and often meddlesome civil authority, especially as the latter is quite unable to cope with the situation.

While I was in Manila last January, through the kindness of Dr. Shattuck, the prison physician, I was afforded the opportunity of inspecting Bilibid Prison. This is a large general prison for the whole archipelago, not being used however for military prisoners. Some days previous to my visit Dr. Strong, of Manila, had injected anti-cholera vaccine into a number of prisoners. Unfortunately the tubes had become contaminated with the organisms of bubonic plague so that typical plague was produced. These cases were all, I believe, injected in the arm, but the buboes first appeared in the inguinal lymphatic glands, as is the case with ordinary epidemic plague. As everyone knows, a number of these

cases died and the unfortunate affair has since been widely heralded. I saw a number who recovered. Most of these had large sloughs at the site of inoculation. It was indeed a sad blow to experimental medicine, but it has since turned out that no human agency could have foreseen what might happen. At one time there seemed to be an effort, more or less determined, to have Dr. Strong removed from his position with the municipal government, and there are doubtless many Filipinos who would gladly see all Americans removed from the Board of Health as well, but Dr. Strong has been and should be retained in the service of the government. The hospital in Bilibid has a good service with adequate operative facilities and there is abundant opportunity for pathological work.

The Municipal Laboratory of Manila is a splendid institution and is doing fine work with such men there as Drs. Strong, Musgrave and Marshall. The building is well appointed and is equipped with everything necessary for pathological and bacteriological work. There is a splendid collection of photographs there, covering almost everything of interest in the islands in anthropology, botany and zoology, as well as a great number of photographs of pathological specimens, types of disease, microphotographs of bacteria, etc., and best of all one may look through these volumes, take down the number of the photographs he wishes and supply himself forthwith, by simply leaving an order at the office.

During the past few months the segregation of the lepers has occupied the minds of the authorities. All persons supposed to have leprosy, or in whom there was any suspicion of the disease, were examined in the *barrios* and *pueblos*. The local *presidente* as a rule gathered the sick ones together and upon the arrival of the health officer they were examined. A boat known as the "leper boat" went along stopping at the various ports. Those suspected of having leprosy were taken aboard and not allowed to go beyond a certain point; there they were examined, and some material, usually scrapings from the nose, was examined, several times if necessary, for the bacillus lepræ. If the finding was positive the sufferer was sent above and kept under guard; if negative he was allowed to go. Each night the vessel was carefully swabbed down with an antiseptic. A great number of lepers have been gathered in this way but a great many more have probably eluded the health officials. The law spares neither position nor wealth, and one of the rich men of the islands, a victim of the disease, has been condemned to exile. He is now under a heavy bond to go to Culion whenever he is called upon to do so, and is at present winding up his business affairs. The leper colony is situated upon Culion Island, one of the most isolated of the group and just north of Palawan. Upon it all the lepers must live, they being provided, however, with subsistence by the Philippine Government, so that no hardship, beyond the isolation, is entailed. Upon a neighboring island their families may live, so that a little ray of sunshine falls even upon the leper here.

The natives are for the most part very ignorant of what may be done

for them in a medical or surgical way. If they come to the doctor at all, it is always in a very late stage, and the doctor is expected to do whatever is to be done at the first sitting. A small boy was brought to me not long ago with a bolo wound extending completely through the foot. On account of the infection, I gave him an anæsthetic and put a rubber drainage tube through the foot, expecting to irrigate through this daily. After a week had passed without seeing the patient again, although I had explained to his mother in three languages the dire results of neglecting to come "*manana*," I sent emissaries out and succeeded in finding him and removing the tube. In time I have no doubt he would have regarded that tube as a part of his anatomy. All of us have had our trials in not having patients (especially interesting ones) come back to our clinics, but over here one must learn not to be disappointed if he never sees his patient a second time. A common practice among the natives is to wear a cord about an aching member. If a man has a pain in his shoulder, he wears a cord about his arm; if the pain be in his great toe, he winds a string around it. At first I thought that possibly Bier's congestive treatment for inflammation was in vogue here but on investigation it proved to be superstition, not science.

Infant mortality is everywhere very high, how high at present we do not know, since the death of a young infant seems to make but little impression upon the parents and it is rare for them to call a physician even if one can be had; and away from the larger towns there is no record of death or interment. Although childlike and excitable, the people bear pain, sickness and death with remarkable stoicism, perhaps because they regard these as a part of their heritage; the women especially seem to be able to endure the severest suffering without a groan. With the better educated class gratitude is often found and often expressed; with the more ignorant it seems to be never expressed, although it may be felt. One comes to feel in time, however, that he must not feel aggrieved if his services seem to be unappreciated, for surely must we not extend Tolerance to Ignorance?

Manila, June 10, 1907.

PARIS LETTER.

[FROM OUR OWN CORRESPONDENT.]

TREATMENT OF LESIONS OF THE LUNGS.

At a recent meeting of the Academy of Medicine, M. Delorme presented an important communication on the necessity of operative procedures in penetrating wounds of the thorax accompanied by lesions of the lungs. A most interesting discussion followed the reading of the paper. M. Delorme insisted on the necessity of recognizing the grave indications in these cases such as pulmonary hemorrhage, syncope, the

thread-like pulse, superficial respiration, dyspnoea, attacks of suffocation, delirium, temperature, location of external wound, hemoptysis, external hemorrhage and hemothorax. He also thought that too much hesitation was practiced before entering the lung and that a hemothorax demanded immediate intervention.

In the course of the discussion it was shown that the partisans for abstaining from interference were in the majority, and that immobilization with occlusion of the wound ought to be the rule. Without doubt there may be exceptional cases where immediate intervention is indicated, but in the majority of cases lesions of the lungs get well when let alone. Moreover the danger of an empyema should not be overlooked. As to what constitute the indications for an immediate operation, it is most difficult to determine.

CHOLECYSTITIS WITH GALL STONES.

At the Academy of Medicine, July 3rd, M. Terrier reported five cases of cholecystitis with gall stones which had been successfully treated by the Kehr operation. This operation so satisfactory in these cases is less so and can be a source of danger in angiocholitis or in cholecystitis without gall stones.

TRAUMATISM AND APPENDICITIS.

In the course of a discussion which took place at the Societe de Chirurgie, M. Guinard reported four cases from which he concluded that there are only two ways in which traumatism can produce appendicitis: its action may be direct or be the cause of a periappendicular peritonitis. This opinion was not that of the majority of speakers who took part in the discussion. Most of them thought that traumatism does not bring on appendicitis, but that it merely reawakens a latent form of the disease.

INTESTINAL INTUSSUSCEPTION IN INFANTS

In an address, delivered at the Academy of Medicine, June 25th, M. Kirmisson said that the deplorable results from a surgical intervention in intestinal intussusception in infants proves that the diagnosis of this affection is generally made too late. In three cases recently attended by him, the operation was performed 48, 51 and 66 hours after the first appearance of the symptoms. In these three cases death supervened some hours after the operation. M. Lyot, on the other hand, operates six hours after the disease sets in.

M. Kirmisson asserts that the diagnosis is not difficult. Generally, nursing children suddenly present symptoms of intestinal obstruction with colic, spasms, sometimes convulsions; to be followed almost at once by a bloody discharge from the anus. This, according to Cruveilhier, is an almost constant sign. It is necessary to interfere at once and not delay until graver symptoms occur, for a spontaneous cure cannot possibly take place.

Generally the intussusception progresses from above downward. Without recourse to anesthesia, a large rectal injection should be made, the subject having first been placed in an inverted position. Should this fail of good results, a laparotomy should be performed at once, the surgeon not quitting the patient until the obstacle is removed.

ASEPTIC PURULENT PLEURISY.

MM. Vidal and Gourgerot, in a very important communication, assert that the cephalo-rachidian fluid, whilst remaining aseptic, can assume a purulent appearance from the accumulation of normal polynuclear cells, just as in the pleura certain aseptic purulent effusions, with intact polynuclear cells, follow a severe pulmonary congestion. These aseptic purulent pleurisies, though rarer than the effusions of a bacterial origin, should be better known. They develop in the neighborhood of a pneumonic deposit and are merely concomitants of a congestion. They are not specific. Moreover the integrity of the polynuclear cells is soon broken up under the microscope.

OBITER DICTA FROM FOREIGN JOURNALS.

THE REGICIDES.

The morbid psychology of the regicide is summed up as follows, by Regis in *La Revue Medico-Sociale*:

The regicides are degenerates in whom the mental incoordination is shown in a characteristic exaltation. This exaltation consists of a sort of innate mysticism, often hereditary, which lashes the possessor instinctively into political and religious excesses. In case the tendency is not ruffled by circumstances that might bring on an exacerbation, it remains latent and inoffensive; but should it be fed by revolutions, political discussions, outre social theories, inflammable books and journals,—in a word, by an atmosphere surcharged with the dangerous element of excitement plus culture, it will almost immediately take on the hue of a most dangerous fanaticism.

An idea, good or bad, falls somewhere on the earth; it grows rapidly like any other weed, choking by its very poison any remnant of sanity in its way. Ere long the time arrives when it dominates the mentality of one or another exalted degenerate, and the message he reads is that he, of all men, is called upon to strike a blow, to sacrifice his days for a just cause, to kill a king or a powerful personage,—in the name of God, country, liberty, anarchy, or for analogous reasons.

The regicide, due to an exaggerated pride or a foolish altruism, is firm in the belief that he is the avenger and the martyr. This is a thought that has recurred with every one of the ilk; whether it was the ancient regicide, who immolated his royal father for the good of the Church, despite the tortures he knew would be visited upon him, but who did the deed joyfully buoyed up as he always was by the belief of gaining a secure place in heaven; or the anarchist of to-day, the assassin of a chief of state, a queen, a statesman, a representative in authority, who calmly undertakes the job at the price of his own life in the hope that ultimately anarchy will be triumphant. This idea with this class of degenerates soon becomes an obsession, despite the opposition which occasionally is brought to bear against it. In fact, the greater the opposition, the greater the obsession, fed and reinforced, as it usually is by the individual's hallucinations.

These hallucinations are in every respect similar to those of the mystics. They consist of apparitions, which visit the regicides at night during sleep, or in the day-time when they are in a meditative or ecstatic mood. The apparitions take the form of supernatural objects or lumin-

ous beings, that dictate the orders and reveal the glorious mission to be accomplished. Strengthened more or less by these hallucinations, the conviction is such that in executing their act, the regicides feel that in following the mission they are obeying a superior force, just as the mystics invoked the approbation of the Almighty before they struck a blow.

Remembering the regicides' mentality, their characteristics to meditate, to plot and to achieve alone, it can readily be understood that they do not wish to divide honors when committing a crime. Whether we consider the regicides of to-day such Caserio, Lucheni, Bresci or Salsou, or those of centuries ago such as Jacques Clement, Jean Chatel, Ravailac and Damiens, one thing stands out prominent,—namely, that invariably the regicide acted alone, and though strenuous endeavors were made to find an accomplice or a confidant, all efforts proved fruitless.

MEDICINE AMONG THE ANCIENT GREEKS.—THE ORACLE OF EPIDAUROS.

Dr. Raymond Neveu has recently written a book of great interest on the subject of medicine among the ancient Greeks. He unfolds a clear and concise picture of medicine from the most remote times to the founding of the Alexandrian School. In one of the chapters the author recounts a trip he made to Epidaurus, the fatherland of Esculapius, where among the ruins are still to be seen vestiges of the Temple in which the sick sought responses and the recovery of their health by sleeping there. A number of illustrations are corroborative of the description. In what way was Esculapius consulted? Dr. Neveu enlightens us on this score as follows:

"First it was necessary to purify the body by plunging into the pool inside the Temple; then a sacrifice of cakes or a ram (according to one's fortune) was offered. With the approach of evening, after having attended to the lighting of the sacred lamps, the sick retired to a dormitory for the night. It was during these beautiful starry nights, when the sick were deep in dreams, that Esculapius appeared and made known to each the course of treatment to be pursued. For some he prescribed lime-water and the juice of water-hemlock, for others gymnastics and cold lotions."

M. Diehl's highly interesting and documentary book, according to *Journal de Medicine et de Chirurgie*, is filled with Esculapian prescriptions. One of them consists of a partridge steeped in incense; another, a sovereign remedy for pleurisy, is a cataplasm of ashes moistened with wine and applied to the patient's chest. Against the spitting of blood, the infallible remedy was to eat, for three days, the kernels of fir-cones,

prepared in honey ; to recover the sight, nothing was better than a certain collyrium made of the blood of a white cock ; and finally water enjoyed a great popularity both for drinking and bathing purposes. But the most curious prescription is the one Esculapius gave to a poor dyspeptic who had supplicated the god for help :

"Never get angry. Limit yourself to a special diet composed of bread and cheese, parsley and lettuce, slices of lemon boiled in water, milk mixed with honey ; then go to the gymnasium, balance yourself on the highest terraces of the sanctuary, rub your body thoroughly with dust, walk barefoot before bathing, take a hot bath into which has been poured wine, wash and rub well and for the trouble give a drachma to the bath-keeper. Afterwards rub with salt and mustard, gargle with cold water so as to cleanse the uvula and tonsils and finally, make a sacrifice to Esculapius, and do not forget on leaving to tip the attendants."

The next day at dawn, each invalid related to the priest the instructions of Esculapius. "Ancient sympathy," says M. Diehl, "was of a practical nature. The propitiatory offerings, destined to render the god kind and beneficent, were always insignificant and modest. It was only after a prayer had been granted that the debt to the god was liquidated. Then a veritable demonstration in his honor took place. If Esculapius remained deaf to the entreaties of his worshipper, he lost all right to the promised offering, but when things were satisfactory, the worshipper was most punctilious about paying, and since Esculapius was a man of his word, popular feeling made it possible that there was no stinting as regards gifts and offerings." In fact, the proceeding had all the modern features of a quick and grateful reciprocity !

Judging by all the prescriptions that Esculapius dictated to his devotees, one can conclude that he was a great hygienist, and with the exception of the charlatanism prevalent at the time, the great priests really made wonderful cures by applying the simple ideas of hygiene, ideas true of all times.

ALCOHOL AND THE INFANT.

M. Brunon, whose efforts against the spread of alcoholism in Normandy are well known to the public, has the following to say about the consumption of alcohol among infants in that part of France :

In Normandy it is not unusual to see women mix coffee and cognac in nursing bottles. These women are employed outside their homes ; therefore, some means must be devised to keep their babes quiet in the cradles during their absence. Their ingenuity takes this form : A bottle containing the mixture is placed under the pillow to keep it warm, and attached thereto is a long rubber tube which the child, once the nipple is

placed between its lips, reluctantly gives up. Automatically it "gets drunk" and thanks to its heavy slumbers, the neighbors are not disturbed. The nursing bottle, minus the long tube, recommended both by the Prefect and the Medical Inspector, is decidedly *en evidence* on the table or mantelpiece in various homes, but its use is nil, for it requires to be held whilst nursing the babe. All this sounds like exaggeration, nevertheless in the district indicated it is a twice-told tale. Ask any physician, draw him out if possible, and you will soon hear a corroboration of the above startling facts.

According to M. Tourdot (*Journal de Medicine et de Chirurgie*), approximately one-half of the families of workmen at Rouen resort to the coffee and cognac "treatment" for babes, whose ages vary from six to eight months. One very honorable woman who was bringing up a number of babes with her own, was in the habit of administering a teaspoonful of cognac at night to induce sleep. After the occurrence of the third death in this interesting family, Tourdot discovered the true cause.

All that we could possibly say on the subject of the abuse of alcohol among infants would fall short of the truth. A workman's home that is sober is the exception.

BOOK REVIEWS.

THE TREATMENT OF DISEASE, A MANUEL OF PRACTICAL MEDICINE. Reynolds Webb Wilcox, M. A., M. D., LL. D., Professor of Medicine at the New York Post-Graduate School and Hospital, Consulting Physician to the Nassau Hospital, Visiting Physician to the St. Marks Hospital, Fellow of the American Academy of Medicine, etc., etc. Quarto Volume, 911 pages. P. Blakiston's Son & Company, Philadelphia. Price, \$6.00.

This treatise upon practical medicine gives to the profession a concise modern conception of the late clinical data and therapy. The volume covers the entire field of medicine, giving enough space to the definition, etiology, pathology and symptomology of each individual disease to present them in their most advanced aspects. To this is added the treatment which is considered more completely and in detail. The completeness of the volume regarding all these demands make it especially valuable for medical men, even those interested in special fields, for it meets the requirements of both the general practitioner and the specialist.

PRINCIPLES IN THE PRACTICE OF MEDICINE. Arthur R. Edwards, A. M. M. D., Professor of the Principles and Practice of Medicine and of Clinical Medicine in the Northwestern University Medical School, Chicago; Attending Physician to Mercy, Wesley Hospitals, Etc. Octavo Volume of 1528 pages, illustrated with 110 engravings and 19 plates. Lea Brothers & Company, Publishers, Philadelphia.

This new treatise, covering the entire range of modern practice, is much the most advanced general work extant at the present time. The most recent systematic classification of the diseases, the well-selected compilation of the latest scientific theories and principles, and the specific application of detailed therapy make this book a distinctive one on the principles and practice of medicine. The author has followed the same thorough system in dealing with every individual subject in this book. This makes it an easy matter to appreciate the importance of the separate divisions and at the same time greatly facilitates the process of reasoning and deduction which will necessarily promote more systematized thinking in clinical medicine. The intimate association of the clinical manifestations with pathological lesions, and not their separate consideration without this relationship impresses on the book the latest method of advancement and will be the means of producing a better general understanding of the direct cause for clinical findings. The large number of tables giving the differential diagnosis of similar diseases, the statistical frequency of each disease, the value of the cardinal symptoms given in the order of their importance, etc., make it without question the best reference for diagnosis obtainable in the English language. The detailed treatment, including, in many cases, the physiological action of drugs, the rationale of medical, dietetic and hygienic therapy, besides the introduction of the accepted surgical indications of to-day, places this treatise at the head of the texts on general medicine.

THE ESSENTIAL OF HISTOLOGY, DESCRIPTIVE AND PRACTICAL. For the use of students. By E. A. Schaefer, 7th Edition. Lea Brothers and Company, Philadelphia, 1907.

An old friend in a new cloth. It is a relief to turn over the pages of this book, admire again the concentrated and objective diction and to be elevated by the aspect of the beautiful illustrations. None of the so-called text books of histology, with which our book shelves are crowded, can compare with this volume, that, absolutely original, is impartial in dealing with the subject and abstains from theorizing and speculating on isolated data. For a student no more ideal guide can be imagined. It ought to replace the majority of books now in vogue.

A REVIEW OF THE OPSONINS AND BACTERIAL VACCINES. By E. M. Houghton.
 DIRECTIONS FOR THE DETERMINATION OF THE OPSONIC-INDEX OF THE BLOOD. E. C.
 L. Miller. *Therapeutic Gazette*, January 15, and March 15, 1907. Reprint.

This reprint can be recommended for use by workers that want to become familiar with the subject of opsonins and perhaps themselves try their hands on it. It gives all that is necessary and abstains from far reaching conclusions that, unfortunately, are so rampant, of late.

WOMAN. A TREATISE ON THE NORMAL AND PATHOLOGICAL EMOTION OF FEMININE LOVE. By Bernard S. Talmey, M. D. Practitioner's Publishing Co., 62 West 126th Street, New York City.

The subject matter of this little volume of 228 pages is clearly stated in its title. There can be no doubt that the practicing physician is in need of reliable information on this subject, so that the reviewer can limit himself to the statement that the necessary information is given in this book in a most judicious and satisfactory form.

A SYSTEM OF MEDICINE BY MANY WRITERS. Edited by Thomas Clifford Allbutt, Regius Professor of Physic in the University of Cambridge, and Humphrey Davy Rolleston, Physician to St. George's Hospital and to the Victoria Hospital for Children, etc. London, McMillan & Co. Limited. 1907. Volume Two. Price: Cloth, \$5.00 per volume.

The second volume of this famous system appears in two parts, each representing a book of more than a thousand pages. The first part contains the continuation of the Infections and Intoxications, together with an important article on the General Pathology of Infection, by James Ritchie. By grouping all the Tropical Diseases and Animal Parasites together in a second part of the second volume the editors have produced a complete work on Tropical Medicine.

The various articles contributed by authoritative writers represent the most up-to-date information available on the different subjects.

PRACTICE OF GYNECOLOGY. By W. Easterly Ashton, M. D. LL. D., Professor of Gynecology in the Medico-Chirurgical College of Philadelphia. Third Edition, thoroughly revised. Octavo of 1,096 pages, with 1,057 original line drawings. Philadelphia and London, W. B. Saunders Co. Cloth, \$6.50 net.

A text-book which, within two years, calls for three editions, does not seem to need further praise. It certainly can be assumed that it presents the subject in a form most suitable to practitioner, teacher and student. The fact may be stated, however, that the changes noticeable by comparing this new edition with the second, beyond doubt, justify both the author and the publishers to call it a "thoroughly revised third edition."

CATHOLIC CHURCHMEN IN SCIENCE. Sketches of the Lives of Catholic Ecclesiastics who were among the Great Founders in Science. By James J. Walsh, M., D., Ph. D., LL. D., Professor of Medical History, Fordham University Medical School, New York City. American Ecclesiastical Review (Dolphin Press) 1906. Pp. x-221. Price \$1.00 (plus 8 cents postage) net. Philadelphia.

This volume is of special interest to physicians, as it contains sketches of the lives of men who made great contributions to science, especially to the science of medicine. Copernicus, the greatest of modern astronomers, was a physician. Basil Valentine, the founder of pharmacological chemistry; Linacre, the founder

of the Royal College of Physicians, of London; the great anatomist and discoverer of the duct which bears his name, Steno or Stensen; Kircher, who first described the association of insects with the carrying of infectious disease; Abbe Haüy, the founder of crystallography; and Mendel, whose work on heredity in biology is the foundation of the science of heredity;—these are the men whose lives and characters are described. The book contains portraits of each, and supplies in compact form knowledge which otherwise could only be obtained by rather painstaking research in medical literature.

A MANUAL OF OBSTETRICS. By A. F. A. King, M. D., Professor of Obstetrics and Diseases of Women in the George Washington University, Washington, D. C. Tenth Edition, enlarged and thoroughly revised, with 30 Illustrations and 3 Colored Plates. Cloth, \$2.75. Lea Brothers & Co., Philadelphia.

King's Manual is now beginning its second quarter-century with its tenth edition. No other obstetric book extant has such a record. In its present form it reflects the most up-to-date obstetric teaching in that clear and concise way which has gained for this little volume its well deserved popularity.

THE ABDOMINAL AND PELVIC BRAIN. By Byron Robinson, M. D., Chicago, Publisher; Frank S. Betz, Hammond, Ind.

The volume embodies the author's views concerning the anatomy, physiology and pathology of the abdominal and pelvic brain. The former is the solar and epigastric plexus; the latter the group of cervico-uterine ganglia surrounding the uterus. The work, furthermore, contains chapters on gastro-duodenal dilatation, splanchnoplexitis and many other subjects of interest and practical importance.

Most of Robinson's views are based upon personal original investigations. It is this fact which makes the volume interesting and instructive, although one can hardly agree with all the theories and ideas propounded by this prolific writer.

ESSENTIALS OF OBSTETRICS. By Charles Jewett, M. D., Professor of Obstetrics and Gynecology in the Long Island College Hospital, Brooklyn, N. Y. With 80 engravings and 5 colored plates. Cloth, \$2.25. Lea Brothers & Co., Philadelphia, 1907.

This well-known, compact volume of 413 pages, 12mo., is an introduction to the more elaborate treatises. It can, with good advantage, be used by the student as a guide in following the theoretical and practical teaching of college courses. The book has been thoroughly revised and to a large extent rewritten.

PARAFFIN IN SURGERY. By Wm. H. Luckett and Frank T. Horn, Mount Sinai Hospital Dispensary, New York. With 38 Illustrations. Published by Surgery Publishing Co., New York.

Quite a careful monograph on this subject, which will serve well as a guide for those intending to use paraffin. The history of its use, the pathology and chemistry are well covered, and the experience of the authors is given in case histories from their practice. A complete bibliography is given.

A GUIDE TO DISEASES OF THE NOSE AND THROAT, AND THEIR TREATMENT. By Chas. E. Parker, F. R. C. S., Edinborough. Surgeon to the Throat Hospital, Golden Square, W. With 255 illustrations. New York. Longmanns, Green & Co., 1906.

The volume of 624 pages, founded on the lectures given by ten authors, at the Throat Hospital at Edinborough, is intended as a guide to those attending those special lectures.

In the first chapter the author lays great stress on the methods of examination. The next chapter is devoted to the various methods of local treatment. In the succeeding chapter the various diseases are discussed.

The various subjects are treated in a very careful manner, and the only drawback to the work is that only two pages are devoted to anatomy, and the physiology is entirely neglected.

The work contains an appendix in which recent studies of Fibrinous Rhinitis and Nasal Diphtheria are discussed.

The book has a very good index.

A TEXT BOOK OF THE PRACTICE OF MEDICINE FOR STUDENTS AND PRACTITIONERS.
By Hobart Amory Hare. Second Edition, Revised and Enlarged. Lea Bros. & Co., Philadelphia and New York, 1907.

The author has endeavored to embody in this volume of some 1,200 pages, the experience of more than twenty-two years of active hospital and private practice. During this time he has been teaching the subjects of clinical medicine and therapeutics.

The volume is intended, therefore, as a practical guide and text-book for physicians and students. The work is well arranged, the first part being devoted to infectious diseases, the second to diseases of the respiratory system, diseases of the circulatory system, diseases of the digestive tract, peritonum, of the liver, of the biliary tract, of the pancreas, of the kidneys, of the ductless glands, lymphatic system, of the blood, of nutrition, intoxications, diseases due to animal parasites and diseases of the nervous system.

The chapter on the nervous system is divided into those diseases in which the chief manifestations are in the brain and its membranes, those in which the chief manifestations are in the spinal cord or its membranes, those in which the chief manifestations are in the nerves, those in which the chief manifestations are in the muscles and functional nerve tissues and diseases of disputed pathology. This chapter is especially well arranged for the practitioner.

The chapter on tropical diseases, heretofore scarcely known by our practitioners, is especially full, and all of those diseases met with in our possessions and which are frequently transported to our shores are dealt with in detail.

MEDICAL DIAGNOSIS: A MANUAL OF CLINICAL METHODS FOR PRACTITIONERS AND STUDENTS. Fifth Edition. By J. J. Graham Brown, M. D. and W. T. Ritchie, M. D. New York: Imperial Publishing Company, 1907.

The popularity of this book is attested by the fact that it has gone through four editions. It will be found a thoroughly practical summary of the methods in daily use both as regards physical examination and laboratory work. It is perhaps inevitable in a book of this character that the discussion of the finer diagnostic methods should be somewhat uneven. Thus no mention is made of the more recent methods of cardiac percussion nor of functional cardiac diagnosis. On the other hand the discussion of the Widal test is very complete, and more than four pages are devoted to the opsonic index.

THE COMMON BACTERIAL INFECTIONS OF THE DIGESTIVE TRACT AND THE INTOXICATIONS ARISING FROM THEM. By C. A. Herter, M. D. New York: The Macmillan Co., 1907.

While the intestinal diseases due to the bacilli of typhoid, dysentery and cholera, have been studied by a multitude of careful observers, there remains a large field of obscure bacterial infections of the alimentary tract that have hitherto been nearly completely neglected. Prof. Herter has for some time devoted himself to the study of the intestinal flora in various chronic pathologic conditions and his book embodies an account of his methods and a discussion of his results. While as yet these latter do not lead to any very definite and practical conclusions, his

book will be found a mine of stimulating and interesting information and should be in the hands of every physician interested in the study of digestive disorders.

ANLEITUNG ZUR DIAGNOSTIK DER MAGEN—DARM—UND KONSTITUTIONS-KRANKHEITEN. Von. Dr. Gaston Graul, Wuerzburg. A Stuber's Verlag (Curt Kabitzsch), 1907.

The number of books on clinical diagnosis that are steadily being issued is apparently endless. Most of them are merely summaries of the methods in general use and had better remained unwritten. Occasionally, however, a volume appears that is not merely a compend, but embodies individual views, the result of an extensive personal experience. Such a one is the little book under discussion. The writer is a former assistant of von Noorden and is now at the head of a large institution of his own. The various methods of gastro-intestinal diagnosis are discussed and criticised from the point of view of his own personal experience and his conclusions are not always at one with the generally received views. The little book well deserves translation.

THE GROWING YEARS. By William Seaman Bainbridge, M. D. The H. H. Otis Book Co., Buffalo and Chautauqua, 1906.

A popular presentation of the author's views on heredity and the care of the young.

INTERSTATE MEDICAL JOURNAL

PUBLISHED ON THE FIRST DAY OF EVERY MONTH BY THE
INTERSTATE MEDICAL JOURNAL COMPANY

SUBSCRIPTION, \$2.00.

FOREIGN SUBSCRIPTION, \$2.50.

SINGLE COPY, 25c

Subscriptions may begin at any time. Volumes end with issues of December.

Original Articles.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. French and German articles will be received and translated free of charge, if found desirable for publication.

Reprints. (200) of original articles will be furnished gratis to authors making the request, which must accompany the manuscript. Covers to these, and extra reprints, will be furnished at net cost.

Illustrations, such as plates, half-tones and zinc etchings, as in the judgment of the editors are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

Rejected Manuscripts will be returned, if stamps be sent for this purpose.

Advertisements.—Advertising forms go to press on the 5th of the month, the JOURNAL being mailed on the 15th. Time should be allowed for composition of advertisements and

for the sending and return of proofs. Advertising rates will be sent on application.

Change of Address.—In ordering a change of address, it is important that both the old and new addresses be given.

Discontinuances.—The INTERSTATE MEDICAL JOURNAL is not discontinued at expiration of subscription, but is sent until an explicit order to stop is received or a notice sent by us. A large majority of our subscribers prefer not to have subscriptions interrupted and files broken in case they fail to remit before expiration. It is therefore assumed, unless notice of discontinuance is received and the amount of back subscription paid to date, that the subscriber wishes no interruption in his series. Journals returned are not notice of discontinuance.

Remittances should be made by check, draft, registered letter, money or express order. Address all communications to INTERSTATE MEDICAL JOURNAL, Linmar Building, St. Louis, Mo

INTERSTATE MEDICAL JOURNAL.

VOL. XIV.

SEPTEMBER, 1907.

No. 9

EDITORIAL.

WISE SAWS AND MODERN INSTANCES.

Emerson says: "We may congratulate ourselves that the period of non-age, of follies, of blunders and of shame is past in solitude," and though we catch the thought and give thanks with him for our progress from the darkness and bigotry of the past, we feel that increase of knowledge has brought us increase of sorrow and that now we are standing face to face with our own selves and our lack of ability to see the truth and to faithfully interpret facts. A profound thought this, and one fraught with absorbing interest as we look upon ourselves as we are psychically made and realize to the full the influences our faulty opinions and judgments have on the progress of medicine as a science.

Such an introspection, and such an attempt to see with our own eyes the things that others see with theirs, and to bring into accord the result of our various visions, will beyond doubt, convince us that we are tied upon the wheel of error, and that much that we accept as fact with child-like simplicity of faith, is quite opposite to the truth, to another equally competent observer. Our mental make-up is such that no two of us can exactly agree on the truthful interpretation of things that our minds comprehend through our special senses.

In an article, "Nothing but the Truth," Hugo Muensterberg forcefully shows how subject to variation our opinions are, even on the simplest questions. He writes: "Last winter I made an experiment with the students of my regular psychology course in Harvard. Several hundred young men, mostly between twenty and twenty-three, took part. It was a test of a very trivial sort. I asked them simply, without any theoretical introduction, at the beginning of an ordinary lecture, to write down careful answers to a number of questions referring to that which they would see or hear. I urged them to do it as conscientiously and carefully as possible, and the hundreds of answers which I received showed clearly that every one had done his best. I shall confine my report to the first hundred papers taken up at random. At first I showed them a large sheet of white cardboard on which fifty little black squares were pasted in irregular order. I exposed it for five seconds, and asked them how many

black spots were on the sheet. The answers varied between twenty-five and two hundred. The answer, over one hundred, was more frequent than that of below fifty. Only three felt unable to give a definite reply. Then I showed a cardboard which contained only twenty such spots. This time the replies ran up to seventy and down to ten. We had here highly trained, careful observers, whose attention was concentrated on the material, and who had full time for quiet scrutiny. Yet in both cases there were some who believed that they saw seven or eight times more points than some others saw; and yet we should be disinclined to believe in the sincerity of two witnesses, of whom one felt sure that he saw two hundred persons in a hall in which the other found only twenty-five.

"My next question referred to the perception of time. I asked the students to give the number of seconds which passed between two loud clicks. I separated the two clicks at first by ten seconds, and in a further experiment by three seconds. When the distance was ten, the answers varied between three-fourths of a second and sixty seconds, a good number judging forty-five seconds as the right time. One, a Chinese, called it half a second, while all those whose judgments ranged from one second to sixty seconds were average Americans. When the objective time was three seconds, the answers varied between half a second and fifteen seconds. I emphasize that these large fluctuations showed themselves in spite of the fact that the students knew beforehand that they were to estimate the time interval. The variations would probably have been still greater if the question had been put to them after hearing the sound without previous information; and yet a district attorney hopes for a reliable reply when he inquires of a witness, perhaps of a cabman, how much time passed by between the shooting in the cab and a cry."

Sir Alfred Wills, in describing this tendency of the human mind, has said: "A constant source of difficulty in judicial investigations lies in what seems almost like an ineradicable tendency of human nature—an impulse to appear to know everything about occurrences of which the witness in reality knows but a part and often a small part. . . . It seems to require some moral courage to say 'I don't know.' It is not that the witnesses mean to deceive, but they have reasoned out what they never really observed, and confound the impressions so produced with those of actual observation. Again, Mr. Baron Alderson says: 'The mind was apt to take a pleasure in adapting circumstances to one another and even straining them a little, if need be, to force them to form parts of one connected whole, and the more ingenious the mind of the individual the more likely was it, in considering such matters, to over-reach and mislead itself, to supply some little link that is wanting, to take for granted some fact consistent with its previous theory and necessary to render them complete.'"

In what way this ever-present fault of our minds bears on the science

of medicine it is not difficult to understand. The progress of medicine is surely retarded at present by the desire for explanations. Certainly a wrong explanation is worse than none at all, and we well know the devious and thorny paths that medicine has trod, due to the false interpretations of facts. Nevertheless we are all afraid to say that "we do not know," and any one of us will agree in a long discarded opinion rather than confess that we know nothing more about it. We agree with Dr. Hale White in his urgent appeal for accuracy of thought, and we recognize with him the "mesopotamia-like soothing influences of words."

In surgery, as well as physic, the mind may go far afield and follow false gods, the Baals of these being statistics and the acceptance of facts upon authority. We know that our first duty is to discover what ails our patient, and our second duty is to provide the proper treatment. But also we all know the potent influences of the phrases, "you must do something," and "what is the matter with me?" and we know the feeling of uncertainty and secret shame that comes with making such a diagnosis as "irregular gout."

Let us try to develop men who will say out and out, "I do not know" and take pride therein.

Realizing to the full the errors our judgments are capable of, and the tricks provided for us by our memories and senses, we should protect our integrity and that of those who depend upon us, by candor and truthfulness. In so doing we shall make it easier for medicine to shed its coat of inexactitude and gain a scientific dignity.

A NEW INTERPRETATION OF OUR DRACONIAN SOCIAL LAWS.

In the early days of our civilization when our ancestors forsook their inartistic wigwams for pathetically artistic frame houses, the question of the social inequality between the front and rear entrances did not enter into what Mr. Henry James calls "the strange irregular rhythm of life." There were excellent reasons for all absence of irritating differentiation; life was monotonously regular and if the simple folk had one quality which outshone others, it was the possession of a stolidity that deadened their limited artistic sense to a just appreciation of the merits and social superiority of the ornate front-door, and the demerits, not to say degradation, of its less fortunate antagonist.

Quite different, indeed, to our ancestors of crepuscular intelligence, is the owner of an apartment building at Newark (N. J.), for he has de-

creed that physicians are not a whit better than grocers' delivery boys and servants' visitors, and that any physician frequenting the premises, in a professional sense, must shun the front entrance and use the lowly portal through which milkmen, butchers and bakers troop on their daily pilgrimages. One daring physician, who violated the rule and was turned back, is now suing the lordly landlord for five thousand dollars as a balm for his wounded feelings.

The circumstance not only illustrates the arbitrariness of our social laws but shows the utter insensibility of an American landlord to the mundane elevation of a prosperous member of the profession. We take it the physician was a man who commanded at least five dollars a visit; otherwise, would he have been bent upon entering an apartment building that had the distinction of two entrances, fashioned so that the stupidest person would know their respective uses? Granted that this was the case and that the physician conformed to the landlord's conception of our best social ideals by being properly and fashionably accoutered, our humble opinion is that an obtuseness and narrow-mindedness that refuses recognition of money and good clothes—tenets written in fat letters in the American Almanach de Gotha—should be punished by all the severities of our just and stringent laws.

Here, indeed, is a splendid opportunity for some ambitious wight to write a Complete History of American Sociology. The book, should so Gargantuan a performance ever be effected, ought to mention all the many strange and diverse factors that have entered into the web and woof of our social fabric; how simplicity of thought deserted us with the advent of a rare discrimination which, unlike what it has done in any other country, civilized or uncivilized, produced the most original social chart that history will ever record. There should be no slighting of the fact that we have placed the wholesale dry goods merchant leagues above the retailer; the butcher below the grocer and that we do not hesitate to crush the audacity of the upstart head of a shoe store who would dare to level his gaze at the superlatively exalted owner of a boot and shoe factory.

These are but a few of the bright passages which should ornament the book. We are sure of these because that great baby, the public, as Thackeray would say, has accepted them without a murmur. As regards the Newark physician, though his social status is still a mooted question, a favorable decision will not preclude the matter from appearing in a chapter by itself, just to illustrate to a crowd of zanies, how our original and unique social laws have made men happy, in a land unhampered by anything that smacks of absolutism.

A VOICE FROM THE ORIENT.

From our Seat of the Scornful we have dealt out to the benighted denizens of the Orient so much gratuitous advice about things in general, that at last a critic has arisen among them to wound us in our most vulnerable part—our pride in our occidental superiority as regards personal cleanliness. The article to which we would like to take exception but to which we must, in truth, subscribe our highest appreciation for verities fearlessly related, appeared in the Madras Antiseptic, for July, and heralds forth the avoidable social crimes consequent on the artificial life in our large cities. The unkindest and most veracious note is the charge that but for Anglo-Saxon influences, the Hindus today would be the same clean folk they were some years back when daily bathing was the best tenet of their Mohammedan creed. And mark you, this is good, sound sense and not “the loud clarion of the braying ass” as the flippant both here and in England would have us to believe.

No doubt for a foreigner to speak of a lack of personal cleanliness among a people so cleanly as we pretend to be, will strike the average American as the opposite of pointed truth, and as for dubbing it a social crime, our risibilities will be stimulated for many a day. For with us, social crime has had a special and peculiar significance which, for years, we have associated with the devastation following random pistol shots or the indiscriminate use of knives, and could not possibly be made applicable to so slight and insignificant a matter as the absence of the daily bath. Daily, we might say, we hear that certain choice spirits among us have returned from excursions into the slums, with more or less harrowing tales descriptive of the ravages of gaunt hunger, the absence of true spirituality and the impending signs of crime, but if any have ever mentioned the lack of cleanliness as the greatest of all social crimes, our readings certainly have been of a superficial order.

A very pretty idea obtains among us that because some thousands in a large city are advocates of the best principles of cleanliness, the whole community more or less follows in their footsteps. When any description of the rank condition of our tenements is given them they either disbelieve, founding their foolish opinion on their daily ablutions, or shudder to think that such gross ignorance can exist in what they are pleased to call so civilized a community. Were they to visit any of the tenements which disgrace our American cities, they would be purblind, were they not struck by the utter lack of facilities among the poor for combating filth. And here it would be well to mention the educative factor as a means of gradually bringing our lower classes around to a proper understanding of the use of the bath, as a preventive measure against the many visitations of those special diseases, which unfortunately fall to their lot. That little can be accomplished without driving the shaft home in the way we suggest was illustrated in an article in the June number

of the *Canada Lancet*, where Dr. Jacobson of Brooklyn, says: "In multitudes of tenements the only general ablution that ever takes place is practiced once on a newly born child and again on the corpse of any deceased member of the family. A prominent English ecclesiastic is reported to have stated publicly on a recent occasion that there was only one bath tub in a densely populated district of London to which he ministered, and that one tub was his own. One is reminded of the model tenements which were once upon a time constructed in New York City, and in which bath tubs were installed on the theory that the reason why the masses did not bathe was because they lacked facilities. Not long afterwards it was found that every tub was being used as a coal bin."

The vaunters of our civilization who see perfection on all sides are really very poor critics of the fruits of our aims and tendencies. The fundamental idea of an act for the betterment of mankind may be in the right direction, but the communal intelligence may be at so low an ebb that not only is the idea dwarfed but sometimes utterly annihilated. To explain what we mean, a consideration of the difficulty of introducing municipal bath houses in the thick of our population is an apt illustration of an almost moribund idea being slightly galvanized into a semblance of life by a few reformers, with results of so ungratifying a nature that it would be well to speak of them in a low whisper lest the Man in the Mysterious East should hear of them. As for our tenement houses with their ill-lighted halls, their lack of bathing facilities, their odors that reach to the street, if not to a disputed heaven, of these modern improvements tell it not in Gath nor whisper it in Ascalon.

If the Earl of Dorset was right when he said that "Deep conceits, like maggots, breed in carrion," we ought to abolish our "deep conceit" about our superiority lest another critic come to the front with harsher criticisms than are contained in the article in the *Antiseptic*, and many gentle reminders of the direful fact that our conceit but shows a rotting something instead of a lusty entity of intellect and enterprise.

PHANTOMS OF THE IMAGINATION.

We doubt if there is another problem affecting modern life that has been subjected to greater indignities, at the hands of little men made strong by blatancy, than has been the fate of what philosophers in the street are pleased to call, "the venereal peril." In the past year or so, a goodly array of writers for the American medical press have exploited the subject from Alpha to Omega, in the hope that their bald, unjointed chat would be the means of solving a problem with which the greatest sociologists have striven, with only partial success. That the tide is still on us is indicated forcibly from week to week, but never was there a better illustration that we are still wandering "through all the realms of Nonsense absolute," than the article in the *New York State Journal of Medicine* for July, which starts out with the burdensome title, "On

Idle Wives, Unmated Men and the Venereal Peril,"—palpably copied from the novel, "The Gods, Some Mortals and Lord Wickenham," by John Oliver Hobbes,—and winds up with kindly advice to the "spinsters of New England."

The problem is worthy of the most serious consideration for at present the inroads of certain diseases are annihilating the sturdiness of the human race. For ages the protection of human life has been uppermost in the minds of social philosophers, and if the results today do not warrant the world's applause, they are gratifying enough, as regards certain reforms, to make us hold our heads a little higher. But a certain deplorable phase of puritanism has kept our hands off this subject, and will continue to do so, so long as it is tabooed in a society whose watchword is cant. We are firmly convinced that something ought to be done soon; that State intervention might be effective if only to protect the offspring of diseased parents. Of course, this would call into play a certain amount of absolutism which would be contrary to all the sentiments firmly implanted in free-born Americans, but it would be powerful enough to change for the better, things which our present laxity allows to take their own course. Moreover, it would put a stop to the phantoms of the imagination which certain writers are deluging us with, in their gropings to find the ray which shall illuminate their present intellectual night.

Among the few who have written words that should impress themselves on the national conscience, is Sir John E. Gorst, whose book "The Children of the Nation," has recently been published in this country. Under Preventive Measures he says: "It is on behalf of the innocent victims of the disease, and especially of children whose lives may be blasted from birth through no fault of their own, that the intervention of public authority is demanded. If public morality demands that no special steps should be taken to protect the primary sufferers from this disease, it seems equally obvious from the same point of view that no special privileges and immunities should be accorded to it; it should be treated in the same manner and on the same principles as all other contagious diseases are treated, and the sufferers from it should be required to surrender so much of their individual liberty as is essential to public safety. A person affected is as much a source of public danger to other people and to innocent children as a person who is suffering from smallpox. Why should such a man or woman be exempted from the obligation to report his or her condition to the officer of health, and to submit to such treatment either in hospital or elsewhere as the interest of the public may require? To permit concealment of the danger from the public officers of health is a privilege not accorded to sufferers from scarlet fever or smallpox. There is nothing at all impracticable in requiring and enforcing such a notification. 'It is what they do in Russia,' says Sir Alfred Cooper. 'I was in St. Petersburg in 1875, and they have greatly

checked syphilis there. Directly there is a case it is reported, whether it is a prince or princess, or duke or duchess, or even one of the grand dukes. If one of the grand dukes gets syphilis it would have to be reported, and he would be surrounded by police regulations, and it would be quite impossible for him to pass it on to anybody."

As for the article with the prolix title, its insignificance is hardly worthy of mention and engages our attention only because it best illustrates the trend of thought in our journals. "Idle Wives" may be a menace to marital happiness, but surely one would be a bit narrow-minded to hold them up to public scorn for the crimes imputed to them by the writer. That the economic question deters men from marrying is an aged shaft that philosophers have launched at the public's head since Adam Smith wrote "An Inquiry into the Nature and Causes of the Wealth of Nations." Nevertheless, though the cost of living changes, one might say, with the seasons, and is about the most variable proposition which confronts mankind, we have not as yet heard that an increase in the number of marriages due to cheapness of commodities, has curtailed the number of venereal diseases. Now the author of the article would have us believe all this, especially his remark about "unmated men," and so possessed is he of the indisputable truthfulness of his belief that he says: "I should not blame the spinsters of New England if they should organize and *en masse* march upon Boston, whence the boys of their childhood have gone, with banners bearing the slogan, 'We demand our birth-right; we demand to be loved.' The spectacle of a number of young women engaging in this sort of warfare would do much to increase the world's humor, but we doubt if a successful campaign on the part of the virtuous besiegers, would eradicate the venereal diseases which the young men acquired during their stay in the puritanically wicked city of Boston.

LITERARY NOTES.

The hysteria of Saint Theresa, the appendicitis of Henrietta of England, the high-strung temperament of General Hoche, the suicide of Beaumarchais, the alimentary regimen of Napoleon at St. Helena, the victims of Louis XIV, are some of the medico-historic problems discussed by Dr. Cabanes in the "Indiscretions de l'histoire" (4th series) recently published at Paris by the Librairie Mondiale, 10, rue de l'Université.

This medico-literary author exercises in this new work the same care as to documentary evidence, the same historic and scientific research, the same impeccable style, as well as refinement and delicacy, which have done so much, in the preceding volumes, to prejudice readers in his favor. According to Dr. Cabanes, the virgin of Avila was not a vulgar hysteric.

Rather was she a neuropath, gifted with a high degree of intelligence and extraordinary will power. Affected with malarial poisoning she developed the malarial cachexia, and this soon led to a nervous breakdown. As regards Henrietta of England, did she succumb to the effects of corrosive sublimate poisoning, (this being the opinion of Legue), to an appendicitis, to a rupture following an ectopic pregnancy, as is claimed by Prof. Pozzi, or to a fulminant peritonitis subsequent to a perforation of an ulcer of the stomach? This last hypothesis is the one that Dr. Cabanes believes to have been the cause of her death, and he adds that the princess having been tubercular, the question of a connection between gastric ulcer and tuberculosis arises. Dr. Cabanes, particularly in this interesting chapter, gives us an idea of the numerous documents he had to consult to arrive at his conclusions. From time to time many people have advanced opinions as to the poisoning of Gen. Hoche. After a thorough examination of all the known and unknown documents bearing on the case, Dr. Cabanes concludes that his death was the result of phthisis pulmonalis. This is also the opinion of the well-known authority M. Debove, who was consulted by the author.

Dr. Mary Putnam Jacobi's *Stories and Sketches* will appear in the autumn under the imprint of G. P. Putnam's Sons. At the time of their first publication, these papers received favorable attention from the critics as well for form of expression and literary quality as for originality of conception and imaginative power. The present volume has been brought into print with the belief that it constitutes a real contribution to American literature, and also as a memorial to the life of an earnest worker, the activity of whose intellect could not be entirely restricted within the channels of her chosen profession.

"The Mother's Nursery Guide. For the Care of the Baby in Health and in Sickness," by Setrak G. Eghian, A.B., M.D., has been published by G. P. Putnam's Sons. In this little work the care of the baby in health and in sickness is treated briefly and comprehensively. In the first part of the book, ample space is devoted to the natural and artificial feeding of infants; and in the second part the most important and common diseases in infancy and early childhood are described.

The author does not wish to imply that this work makes a doctor, in every case, unnecessary; but it is his belief that it will do much to enable the mother to co-operate intelligently with the physician, and to care better for the child in the absence of professional attention than would otherwise be possible.

Dr. Eghian, a specialist in diseases of children, is a graduate of the University of Berlin.

A new edition has just been published (The Macmillan Co.) of Dr. A. Ross Diefendorf's "Clinical Psychiatry." This book, although based on the Sixth German edition of Kraepelin's "Lehrbuch der Psychiatrie," is much more than a mere translation. Dr. Diefendorf has made extensive additions to the original, the chapters on classification of diseases and methods of examining patients being entirely new. Certain other chapters have been amplified, and special attention has been given to subjects of interest to American students and physicians. Dr. Diefendorf is Lecturer on Psychiatry in Yale University, and a well-known expert on insanity.

Longmans, Green & Co., of New York., have in their list of recent publications new and thoroughly revised editions of the following: "The Essentials of Clinical Physiology," by W. D. Halliburton, M.D., F.R.S., Professor of Physiology in King's College, London; "The Essentials of Histology," by E. A. Schaefer, L.L.D., F.R.S., Professor of Physiology in the University of Edinburgh, and "The Diseases of Children," by Henry Ashby, M.D., F.R.C.P., Physician to the Manchester Children's Infirmary.

"The Common Bacterial Infections of the Digestive Tract," by C. A. Herter, has been published by the Macmillan Company. In this work Dr. Herter emphasizes the importance of the work of health boards in the prevention of disease. He dwells at length on the necessity for improved milk sanitation and discusses those cases of chronic intoxication due to the presence of bacteria.

ORIGINAL ARTICLES.

ABDOMINAL SURGERY WITHOUT DETACHED PADS OR SPONGES.

A PRACTICAL METHOD OF USING GAUZE STRIPS SO AS TO ELIMINATE THE POSSIBILITY OF ANY GAUZE BEING LEFT IN THE ABDOMEN.

By H. S. CROSSEN, M. D., St. Louis, Mo.

The absolute certainty of the removal of all articles carried into the peritoneal cavity is a subject that has received much painstaking consideration from surgeons. And it well deserves careful consideration, for the reported cases in which a sponge or forceps has been left in the abdomen are numerous. It is surprising how easily and quickly the intestinal coils will enfold an object and carry it out of sight and touch.

The usual directions to prevent leaving anything in the peritoneal cavity, are (1) to use only a certain number of sponges of various sizes and a certain number of forceps and other instruments; (2) to clamp a corner of each sponge left in the cavity to the sterile sheet about the wound; and (3) to have the sponges counted by an assistant physician or by the head nurse immediately before the abdomen is closed, to see that none are missing. Theoretically this is perfect. But practically it is far from perfect, as is amply shown by the long list of cases, under experienced operators, in which sponges, forceps and sundry other articles have been removed from the abdomen during convalescence or at the post-mortem table. This is due of course, to a slip—to some break in the chain of preventive measures. It may be said that it is no fault of the preventive technique but simply an inexcusable neglect of some part of it. Such a view of the matter may seem very plausible to the inexperienced, but its erroneousness is painfully evident to those who have had personal experience in desperate abdominal cases, where the patient is wavering between life and death and a few moments' delay may turn the balance. As the wound is being hurriedly closed, that the patient may be gotten into the warm bed and the various restorative measures applied, it is found in the counting that a sponge or forceps is missing. Where is it? Is it in the abdomen or is it in some one of the various rolls of things about the table or in the waste container or on the floor. To search the peritoneal cavity again or to delay the closing of the abdomen until everything around the table is thoroughly searched, may cause the death of the patient—while to close the abdomen with the possibility that a pad or sponge is in there is not less dangerous. This makes a most uncomfortable situation and one all too frequent.

Following the usual technique, I operated for years without accident.

But about two years ago I left a gauze pad in the abdomen. It was a pus case in which extensive drainage was necessary, and fortunately the pad was discovered and extracted through the drainage wound. The patient recovered without serious result from the accident, but the lesson was not lost. I determined to find some method that would make such an accident impossible, a method that would be entirely under the control of the operator and first assistant (a greater division of responsibility increases the danger) and one that would occasion no delay in the closing steps of the operation.

To prevent leaving any foreign body in the abdominal cavity it is necessary to take into consideration everything used in the wound or about it, and to make provision not only for the smooth easy cases but for the trying cases that require quick work and also for the various accidents and unusual conditions that may be met with. It is necessary also to make provision for emergency work in the country as well as for work in the hospital with its staff of trained nurses, and it is well to adopt for routine work a technique which is applicable in emergency work under unfavorable conditions, for any considerable change from one's usual and familiar technique is especially undesirable in these emergency cases with poor surroundings and limited help.

There are three things to be considered—the instruments, the large pads for holding back the intestines, and the small pads and gauze pieces for sponging. I decided to use long instruments exclusively, as explained later. For packing back the intestines, I adopted the large gauze roll which had already been used with satisfaction by a number of operators and which is now used very generally. The small pads and sponges gave the most anxiety. I tried several methods and the one finally adopted was the use of long, narrow strips of gauze, each strip packed in a small cloth bag from which it was directly used, as described later. I have been using this method now for more than a year and it has proven entirely satisfactory. The object of this brief paper is to bring to the attention of surgeons generally this systematic use of long, narrow gauze-strips in place of all small pads and sponges. I have experienced much satisfaction and relief from anxiety through the use of the method as detailed below and I believe others will do the same.

In the technique I employ, the following are the points relative to the subject under consideration:

Instruments. All instruments are long—so long that a portion of the instrument is practically always out of the abdominal cavity. Again, if by accident the instrument should slip entirely into the cavity, its length is such that it would almost certainly be felt when the hand is carried into the cavity for the final palpation before closing the incision. All the artery-forceps, dissecting-forceps, tenaculum-forceps, pedicle-needles, scissors and other instruments for internal work are between seven and eight inches long, the shortest being the needle-holder ($7\frac{1}{2}$ inches). The

shortest instruments used anywhere about the wound are the scalpel ($6\frac{1}{2}$ inches) and the heavy abdominal-incision scissors ($6\frac{1}{2}$ inches), both of which are laid aside as soon as the peritoneal cavity is opened.

The needles and Murphy buttons are not brought near the wound except when held in a forceps or with a suture attached. No Michel clamps (for holding rubber-tissue or gauze along the wound margin) or other small unattached objects are allowed near the wound as long as the peritoneal cavity is open.

Large pads. In place of the several separate large gauze pads for packing the intestines out of the way, I adopted the large roll of gauze used by many operators, and have been much pleased with it.

Small pads and sponges. The matter of small pads and sponges was not so easily disposed of. I tried and discarded various plans of keeping track of them. One expedient that I used for a time, and with satisfaction in regard to safety, was the attachment of a heavy iron ring by a short piece of tape to each pad—a suggestion obtained from the work of Dr. N. B. Carson. The ring and tape were folded in the pad before sterilization and at the operation, as the pad was picked up by one corner, the ring dropped out to the length of the tape and remained outside the operative field. This method is safe but it is very troublesome, not only in the preparation of the large number of rings and tapes and sponges but also in their use during operation, for when the assistants are not perfectly familiar with the method the tapes are likely to get tangled and thus occasion delay. This unfits the method for emergency work, where the surgeon must often operate with unfamiliar help.

Not encountering any entirely satisfactory plan I devised the method here detailed of using long gauze-strips, each packed in a small cloth bag in such a way that it can be pulled out a little at a time as needed. I have used the strips systematically in place of all small pads and sponges. As far as I know the method is original, no description of such use having come to my notice. For several years, gauze-strips of various widths and lengths (including the five-yard and ten-yard lengths) have been in general use in abdominal surgery for packing the intestines out of the field and for pelvic tamponade to check bleeding. But that is very different from the method here explained of using the strips systematically for the elimination of all pads and sponges. It is the packing of each long strip into a bag that makes this use of strip-gauze practical and convenient. The small cloth bag confines the long strip in a small space so it is not in the way, and at the same time protects it from contamination.

Each strip consists of a piece of gauze ten yards long and half a yard wide. This is folded lengthwise so as to make six thicknesses. The folded strip is approximately three inches wide and ten yards long, with the raw edges turned in and the ends tacked with thread to keep it from unfolding. Each bag is five inches wide and ten inches deep, as shown in Fig. 1, and is preferably made of extra heavy material and is sewed in

such a way that there is no chance for a raveling to be pulled out with the gauze.

Beginning with one end, the gauze strip is packed firmly, a little at a time, into the bag (Fig. 2). When packed in as indicated, it comes out readily a little at a time as pulled upon (Fig. 5). When all the strip has been packed in, the top of the bag is closed by folding over and a good sized safety pin is attached to the bottom of the bag (Fig. 3). Four of these filled bags, constituting one set, are wrapped together in a cloth, and are then ready for sterilization.

Beside the operating-table they are placed in a dry basin (Fig. 4), close to the basin containing the gauze roll in normal saline solution.

At the operation the lower end of the bag is pinned to the sterile sheet, a sufficient distance away to bring the mouth of the bag conveniently near the wound but not in the way (Fig. 5). The gauze strip is used as a sponge by catching a small part of it with the fingers or with forceps and pulling it out as indicated in Fig. 5. After use, this part is dropped away from the wound and another small part is drawn out and used. The used part is *not* cut off, but simply dropped outside the operative field and, as more and more of the strip is used, this soiled part falls off the table and out of the way (Fig. 6). Thus the greater part of the strip is always outside the abdominal cavity. No detached pieces of gauze are used in the cavity and hence none can be left there.

Usually two strips, one placed on each side at the beginning of the operation, are used in the course of an ordinary abdominal section. In cases where there is but little sponging, only one strip is needed. In very extensive operations where an extra amount of sponging is required, three or four strips may be needed. In no case did I find it necessary to use more gauze than that contained in one set, though I always have an extra set sterilized and ready for use. I tried different lengths and widths of strips, and prefer the size here given.

I thought of using simply one very long strip (long enough to supply all needed for one operation) packed in one large flat bag. But it is more convenient to have a bag on each side, so that either the operator or assistant may sponge at once as needed. Again, in some operations only one ten-yard strip is needed for sponging, in others two and in others three or four. As now arranged, but little more gauze is contaminated than is actually used. Furthermore, in pus cases the sheet and bag beside the wound may become contaminated with infected fluid. In such a case after the infected structure is removed, the soiled sheet and bag are covered with sterile towels and a fresh bag is pinned in place. If the soiled bag contained all the gauze strips for the operation there would be much unnecessary waste of gauze. Consequently I prefer the size of strips above mentioned.

For sponging, I use these strips exclusively from the time the skin is incised until the peritoneal cavity is closed. At first I anticipated considerable tangling of the gauze strips about the forceps in the wound, but



FIG. 1.



FIG. 2.



FIG. 3.

FIG. 1.—The Cloth Bag, Empty. This bag is five inches wide and ten inches deep. It is preferably made of extra heavy muslin or of duck, and the seams must be so placed that there is no chance for any raveling to be pulled out with the gauze.

FIG. 2.—Packing the Gauze Strip into the Bag. The end of the strip is caught with a forceps and carried to the bottom of the bag, and then successive portions are rapidly packed in with the forceps. When packed in thus, the gauze strip may be pulled out a little at a time as needed.

FIG. 3.—The Cloth Bag, Filled and Ready for Sterilization. The safety-pin is for pinning the bottom of the bag to the sterile sheet. Four of these filled bags are prepared for each abdominal-section set.

FIG. 4.—“Pads and Sponges for Abdominal Section.” The simplicity of the method is here indicated. The two basins (one holding the large roll of gauze in hot saline solution and the other holding the four gauze strips, each strip in its bag) contain all the “pads and sponges” needed for an abdominal section.



FIG. 4.



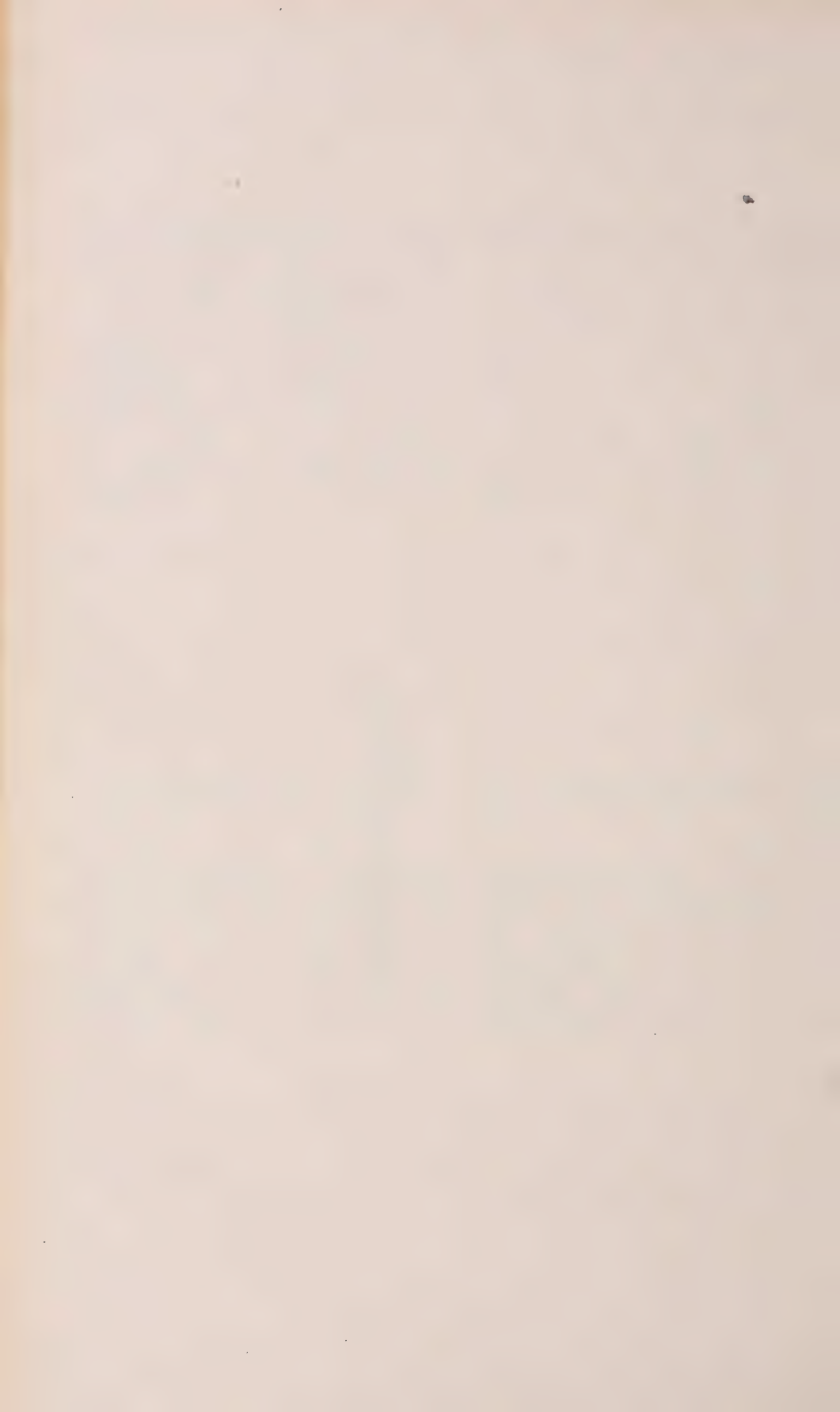
FIG. 5.



FIG. 6.

FIG. 5.—Method of Using the Gauze Strips. Just before the incision is made, a filled bag is fastened to each side of the abdomen, by pinning the bottom of each bag to the sterile sheet. The mouth of the bag lies conveniently near the wound, but not in the way. The end of the gauze strip is caught with the fingers or forceps and pulled out as needed for sponging, as here indicated.

FIG. 6.—Method of Using the Gauze Strips. As fresh portions of the strip are drawn out for use, the soiled portions are *not* cut off, but simply dropped down beside the bag and off the table, as here shown. The greater part of the strip is always outside the abdomen.



found that this could be easily avoided by always dropping the soiled portions of the strip *outside the field close to the bag*, as indicated in Fig. 6. This prevents the accumulation of loose folds about the wound, with which the instruments may become entangled.

Having used this method now for more than a year in various kinds of abdominal cases and under different environments, I feel justified in recommending it as safe, practical and convenient. Combined with the use of the large roll of gauze for packing the intestines away, it simplifies the matter of pads and sponges for abdominal section and eliminates entirely the chance of leaving a piece of gauze in the abdomen.

The directions to the nurse for preparing these are simple:

Pads and sponges for abdominal section.

1 roll of gauze—5 yds. long, 9 in. wide—4 thicknesses.

4 strips of gauze—10 yds. long, 3 in. wide—6 thicknesses.

Have another set (one roll and four strips) in reserve.

For the rolls, the full yard-width of gauze is used—when folded to form four thicknesses it is 9 in. wide. For the strips, the yard-width of gauze is divided into two strips, and each of these, when folded to six thicknesses, is about 3 in. wide.

Turn in all raw edges so that no raveling can be left in the abdominal cavity.

Roll each roll firmly and wrap it in a separate cloth.

Pack each strip into a separate small cloth bag (5 in. wide and 10 in. deep) and attach a large safety pin to the closed end of the bag. Pack in the strip firmly in such a way that it will come out easily a little at a time as needed. Wrap together in a cloth each set of four strips (each strip in its bag). Sterilize in the usual way.

At the time of the operation place two sterile basins within reach of the operator. One basin is to be partly filled with hot normal saline solution and is for the roll of gauze, while the other basin is to hold the four bags containing the gauze strips which are used dry.

That is all the paraphernalia necessary, and the "pads and sponges" are all within instant reach of the operator. The advantages of this will be particularly appreciated by those who have been obliged to handle serious and troublesome intra-abdominal conditions without trained assistants.

The gauze strips may be used also for temporary packing to check hemorrhage or for any other purpose for which strip-gauze may be required in the course of the operation.

SAUNDERS' DISEASE.
ALIMENTARY INTOXICATION (FINKELSTEIN.)

BY JOHN ZAHORSKY, M. D., St. Louis, Mo.

No subject has a greater interest to the practitioner than that of the digestive and nutritive disorders of infants. It is simply exasperating to have an infant, fed on food which apparently agrees with it, suddenly become seriously sick with some digestive disturbance. Since the theories of the bacteriologist have become so popular, for many years it has been the custom to ascribe the acute indigestions to bacterial action, that is their toxin, or some decomposition product of the food. That many acute digestive disorders are inaugurated by bacterial activity can admit of little argument, and under the names of exogenic and endogenic infections may be classified two distinct varieties of the disease: one in which bacteria form poisons in the food outside of the body, the other in which the bacteria produce a poison in the intestinal canal.

These particular poisons, however, have never been proven to exist except in a few instances. The colon bacillus, for example, possesses an endotoxin of considerable virulence, but its exact relation to gastroenteric diseases has never been worked out. There are virulent types of this bacillus which probably can produce an infection, but whether its growth in reasonable numbers in the milk may cause a poison in the decomposition products is still unproven, as far as I am aware. The ordinary toxins are harmless when given by the mouth (snake venom, tetanotoxin).

That true infections by the streptococcus, pyocyaneus, proteus or dysentery bacillus may occur does not prove that all the acute disturbances are invariably caused by bacterial action, and extensive experience with sterilized milk and various sterilized foods only emphasize the difficulty encountered in attempting to regard all the severe acute diseases as infectious. May there not be nutritive disorders which depend on the improper composition of the food? Clinicians will promptly answer this in the affirmative. But when we ask whether certain foods of improper composition may induce a general intoxication from vicious metabolism, which is expressed in symptomatic phenomena resembling a bacterial infection, they are disposed to doubt the possibility. Yet this very standpoint has recently been taken by some prominent European pediatricists. But before going into recent researches on this subject I must relate some observations of an American pediatricist.

About twelve years ago Dr. E. W. Saunders, of St. Louis, in a number of cases, observed a singular group of symptoms which occurred in some infants fed on a proprietary food (Nestle's).^{*} These babies had all been doing well, gaining in weight and to all appearances were perfectly

^{*} The composition of Nestle's Food has since been changed.

well almost to the date of the acute illness. I will give a brief description of the clinical symptoms in his own words.—(*Transactions of the Missouri State Medical Association*, 1896).

"There is another patent food which produces a totally different complex of symptoms ending speedily in death. The symptoms are those of cerebral inanition. The baby which has appeared to the mother to be in good health up to the time of its seizure, suddenly begins to reject food, and the nausea is so intense that the very sight of the bottle will often induce retching in the little sufferer. Insomnia is persistent; hypnotics (if indeed the stomach does not reject them) frequently seem to have no beneficial effect. No fever; fontanelles sunken; countenance, a look of anguish. The eyeballs are constantly rolling and the child seems in a state of terror. It makes frequent outcries, but it is not the cephalic cry of basilar meningitis. The mode of death is peculiar. The mother will say that the child died in a convulsion, but upon inquiry we find that only a slight tremor convulsed the frame and it was all over."

Now, this clinical syndrome I have been calling Saunders' disease. I have met a few cases which resemble it very much. One case recently presented the symptoms so strikingly that a brief history of the case will be given.

S. H., male, aged 11 months, was born at term after a natural labor. The infant was small at birth and was placed on the bottle at once. The first food was a modification of cow's milk, the exact composition of which I did not ascertain. When about three weeks old it had a very severe gastroenteric indigestion which threatened its life. This was the beginning of a long series of acute disturbances of the digestion. At the age of six months, while out of the city, it became sick with an ileocolitis and almost died. When it returned to the city a very prominent physician had a most difficult time in getting the little one to digest any food. Two months before its fatal illness I saw the infant. It weighed only about 9 pounds. The skin was in folds and the infant had the appearance of simply atrophy. The physician in charge had placed the infant on a mixture of egg-albumen, cream and sugar mixture. On this he gained slowly but had two or more stools daily containing numerous curds (fatty salts).

On the day of its death I was called suddenly and obtained the following history of its last illness:

On the previous day the infant had appeared perfectly well although he had refused his food. During the night he commenced to vomit which persisted until the morning. Everything in the nature of food seemed repugnant. Water was vomited. A mixture of water and lime water was also ejected after a few minutes. There had been two evacuations of the bowels the evening before; since then none. The infant lay in a semi-conscious condition, eyes rolling at times. Again he would cry out as if in severe pain. It was ascertained that the egg-

albumen which the attending physician had prescribed, had been left out of the mixture by the nurse and she was feeding the baby on a cream, water and sugar mixture which had approximately (according to my calculations), the following composition: fat 3 per cent; sugar 8 per cent; proteids one-third of one per cent. Hence there was a great excess of hydrocarbons and carbohydrates over the proteids. The sugar used was milk sugar (Merck's).

Examination revealed a small infant (weight about 11 pounds) showing evidence of prolonged malnutrition. The face had an anxious expression when the baby was awakened, but when quieted the infant appeared semi-conscious. The eyes were sunken and the fontanelle depressed. The face was pale, the lips cyanotic. Respiration was hurried and deep. A moderate degree of rickets was evinced by a rachitic rosary and large fontanelles, also the delayed teething. The mouth had a healthful appearance. The pulse rate was 122, but the volume and compressibility of the pulse suggested a weak heart. The rectal temperature registered 99 3-5.

Physical examination of the chest and abdomen revealed nothing of special interest. The second cardiac sound was accentuated. The abdomen was not distended. The extremities showed a slight tendency to rigidity. Kernig's sign was very doubtful.

An ounce of water and lime water mixed was taken after some coaxing, but was ejected in almost 20 minutes. A hypodermic injection of strychnin improved the pulse very much. A large enema brought away a small stool, greenish in color and composed principally of white or greenish white masses (soaps?) The odor of the stool was rather offensive but not more than was usual, the mother stated.

The infant was placed on a starvation diet, no food was ordered. I prescribed a tablespoonful of water flavored with ginger ale, to be given every 15 minutes. Internally one drop of adrenalin chlorid solution, and a little magma magnesiae and peppermint water was to be given every hour. A minute dose of the tinct of strophanthus was also added, to the peppermint-magnesia mixture. No urine could be obtained. No blood examination was made.

The infant had repeated attacks of agonizing cries throwing himself wildly about. He retained some of the water apparently. About three hours after the visit, the infant suddenly had a convulsive tremor and expired.

What caused the infant's death? The cerebral symptoms and the cardiac depression certainly suggested some general poisoning. While the very irritable stomach suggested that an acute gastritis was present, the other symptoms suggested an intoxication. Was a bacterial toxin at the root of the disease? The violent acute onset naturally suggested a toxin in the milk. The cream used in the infant's food was the best obtainable, that is, "certified milk." It was skimmed off daily by the

nurse from a quart bottle. An exogenic intoxication of bacterial origin seemed very improbable.

The similarity of this clinical syndrome to that to which I refer as Saunders' disease at once suggested that the fault may lie in the excess of fat and sugar in proportion to the proteids in the food.

When some proprietary foods are given for some time the infant receives a great proportionate excess of carbohydrates to the proteids. Often the infant receives 8 or 9 per cent of carbohydrates and only 1 per cent of proteids. These improper compositions must lie at the door of the trouble, for certainly bacterial intoxication could hardly be considered in the case of Nestles food, since the food is boiled shortly before use.

In the case which I reported, too, the excess of sugar and fat in the food was the striking evidence of the anamnestic data.

I hold, therefore, that Saunders' disease is a distinct disease. It is a fatal, or at least dangerous illness, characterized by vomiting, severe cerebral symptoms and profound depression of the circulation, and occurs in an infant having digestive disturbances to whom is given a relatively high percentage of carbohydrates. While some proprietary foods having an improper composition is most commonly the direct cause, it may occur as a result of feeding with an irrational milk mixture as noted in the case reported.

II.

The subject of alimentary intoxication from perverted digestion or metabolism has received a renewed practical interest since the publication of the studies on this subject by Finkelstein (*Yahrb. f. Kinderheilkunde*, January and March, 1907.) This author concludes, after a very careful study, that there is an acute nutritive disturbance in infants due to disordered metabolism and not to exogenic infection as commonly taught. In this disease the symptoms of a general intoxication predominate, while the phenomena of collapse and rapid loss in weight point to a profound nutritive disturbance.

A typical syndrome is characteristic of the disease, and Finkelstein insists that all the symptoms must be present in order to establish the diagnosis. The group of symptoms are as follows: 1—Impairment of consciousness; 2—singular change in the type of respiration; 3—alimentary glycosuria; 4—fever; 5—collapse; 6—diarrhea; 7—albuminuria and cylindruria; 8—loss in weight and 9—leucocytosis.

The alteration in the consciousness varies. Usually the infant lies in a stupor, and when awakened has little interest in the surroundings. The eyes are staring and the eyeballs sunken. Occasionally, in severe cases a very wild restlessness supervenes and the little patient tosses itself about and utters shrill cries. Often the disease resembles the classical hydrocephaloid (Marshall Hall) and may be easily mistaken for tuberculous meningitis.

The change in the type of respiration is regarded by Finkelstein as almost pathognomonic. The respiration is slightly accelerated but the inspiration is much deeper than normal. It is regular and not irregular as in tuberculous meningitis.

A very constant phenomenon is the presence of sugar in the urine. This sugar is not glucose as in diabetes, but is lactose and galactose. Langstein and Meyer had previously called attention to this sugar in the urine in infants suffering from a gastro-intestinal disease, but Finkelstein places all these cases in the class of alimentary intoxication.

The fever is usually very moderate. Symptoms of collapse and diarrhea vary in different cases as to the degree of severity. Vomiting may be severe. Some cases assume the type of cholera infantum.

In practically all cases albumin and casts may be found in the urine. The leucocytosis is usually only slight (less than 30,000.)

Certain facultative symptoms are apt to be present. Nervous irritability may be observed. Vasomotor exanthemata are very common. Sclerema may be a complication.

The onset of the disease is usually sudden although on more careful investigation it is found that an indigestion more or less severe has preceded the appearance of the serious symptoms.

Finkelstein declares that this syndrome is in some way etiologically related to the metabolism of carbohydrates. In proof of this he cites certain experimental and clinical data which show that the disorder is most liable to occur in infants who are fed an excess of sugar. The foods which contain a high percentage of carbohydrates are most liable to induce this morbid condition. The buttermilk fever described by Tugendreich, he believes, is really the alimentary intoxication, because a considerable amount (5 per cent) of sugar is usually added to sweeten the milk.

Several infants who were fed on a diet very rich in carbohydrates promptly developed the symptoms. Finally lactose injected hypodermatically also induced similar symptoms.

The most clinching argument, however, was the clinical phenomena that the afflicted infants improved or entirely recovered promptly whenever the sugar was withdrawn from the diet. A cereal decoction (unsweetened) was indifferent as far as the aggravation of the disease was concerned. The most rapid recoveries took place when water or weak tea was administered. Starvation, then, led to prompt improvement.

Further observation showed that either casein or lactalbumin could be safely given, while whey, which contains milk sugar, aggravated the symptoms.

In discussing the nature of this affection, Finkelstein is by no means very definite. Outside of the observation that sugar increases the severity of symptoms, in which effect it is very much aided by an excess of fat, and the presence of lactosuria no proof is given that the sugar

is really the direct cause of the disease. He regards the trouble rather as an intoxication by some unknown intermediary metabolic product, the nature of which is unknown.

III.

Is Saunders' disease the same as Finkelstein's disease? As the complete symptoms have not been gathered in the former disease the comparison can not be accurately made. But as a carbohydrate excess seems to be etiologically related to the former affection I am rather inclined to view Saunders' disease as a very severe type of alimentary intoxication in the sense of Finkelstein. That milder cases of Saunders' disease occur which may end in recovery is extremely probable. That an infant may have recurrent attacks, and thus resemble the cyclic vomiting of older children, is also possible. If the Finkelstein syndrome should prove to be diagnostic of a specific intoxication, this discovery will be a very important advance in the pathology of nutritive disorders.

The alimentary intoxication may arise during the course of a variety of conditions. Most commonly it occurs in the acute indigestion and gastroenteric infections. It may occur at any time during a chronic digestive disorder of infantile atrophy. It is not an infrequent complication of the severe infectious diseases (septicemia, meningitis, etc.) These diseases must be regarded as the predisposing cause, the actual cause being some error in the diet as to quantity and quality.

This subject has been further elucidated by Meyer (*Yahrb. f. Kinderheilkunde*, May 1, 1907), who studied the metabolism in alimentary intoxication. The details of this article need not be given here. Suffice it to state that these researches show that this affection is quite different from that known as acidosis by Czerny and Keller.

It is evident that sugar is by no means a harmless ingredient of the food as is generally assumed. Especially does milk sugar seem to be an offending principle and Jacobi may in the end prove to be correct in advocating the use of cane sugar in preference to milk sugar. Sugar is in itself not the toxic agent as even Finkelstein must admit. The lactosuria is only an evidence of the katabolic disturbance.

Lactosuria as a symptom of gastroenteric disorder has been known for many years, but no one had previously associated this condition with a typical clinical syndrome. That the presence of lactose and galactose in the urine will prove to be absolutely characteristic of alimentary intoxication in the sense of Finkelstein is very doubtful. Meyer (*l. c.*) is probably correct in regarding the presence of galactose as an interference with oxydation. He attributes the presence of lactose in the blood to an improper function of the intestinal epithelium without sufficient proof, however. One thing seems certain, which even Finkelstein admits, and that is the oxidation powers of the tissue cells are very much inhibited. This leads me to connect these researches with those

of Howland and Richards recently published (*Archives of Pediatrics*, June, 1907).

These investigators in studying the recurrent vomiting of children point out that the ordinary products of proteid putrefaction (indol, skatol, etc.) require oxidation before they are transformed into the final product which is excreted by the kidneys. Indol, for example, must be oxidized to indoxyl and this substance combines with sulphuric acid to form indican. Indol is not usually toxic to animals, but if through the internal administration of potassium cyanid or chloroform, the powers of oxidation are reduced, indol becomes very poisonous to the organism.

It is most remarkable that the symptoms given by dogs poisoned with indol resemble in every particular those of Saunders' disease, and it seems to me that while these investigators were working on recurrent vomiting of children, they threw an unexpected light upon some of the grave complications of gastroenteric diseases, especially on that form which I have designated Saunders' disease, or which in its wider application is the alimentary intoxication of Finkelstein.

Of course, no one would assert that indol is the one toxic agent, although it is probably one of them.

Naturally the question presents itself, what has the sugar to do with diminishing katabolic oxidation? Nothing definite can be stated in answer to this question, although several possibilities suggest themselves.

Excessive oxidation of carbohydrates and fats may interfere or prevent the oxidation of other bodies, indol for example. We know that the proper oxidation of fats depends on the normal oxidation of carbohydrates. One substance depends on another for proper katabolism. An excess of carbohydrate katabolism may inhibit proteid oxidation.

An excess of sugar is not the only factor which predisposes to the alimentary intoxication. Some interesting observations of Meyer (*Monatschr f. Kinderheilk*, Bd. v. No. 2) are interesting in this connection. He found that infants afflicted with pyloric stenosis are readily subject to attacks of alimentary intoxication; in fact, death may be due to this morbid condition. He suggested that a demineralization of the body may be the direct predisposing cause, an acidosis (Czerny and Keller) in other words.

Now this is the view that Dr. Saunders entertained concerning the disease which I have named after him. For years he has insisted that these severe symptoms arose because the alkalies, that is the bases, in the foods are not properly adjusted. Urinary examinations are unfortunately wanting.

Excessive terrestrial heat inhibits the oxidation functions and may thus serve as a predisposing cause. Demineralization diminishes the various functions of the organism including ferment action and thus interferes with oxidation.

Finkelstein gives as one of the strongest evidences of this metabolic disorder the fact that the patient immediately improves when only water, weak tea or a cereal decoction is administered. It should be remembered, however, that this method of feeding also prevents intestinal putrefaction, that is the formation of indol. Hence we come back to our original theory that bacterial activity is connected with the appearance of this toxicosis. As to the harmlessness of milk proteid in this condition, too little proof is given. Still, it is in harmony with the clinical experience that albumen water can be safely given in the crises of gastroenteric disease.

The disease improves when the formation of indol in the intestinal canal diminishes, or when normal tissue oxidation is restored. The process as will be seen is very complex and much clinical and experimental work is necessary before the hypothesis suggested can be placed on a definite position. The subject is worthy of special study.

In a subsequent article I will report other cases of Saunders' disease and discuss the clinical management.

1460 South Grand avenue.

MEDIEVAL MEDICAL EDUCATION.*

By JAMES J. WALSH, M. D., Ph. D., New York.

Acting Deán and Professor of Nervous Diseases at the Fordham University Medical School.

Nothing is more amusing than the complacent self-sufficiency with which each generation of men is prone to view the work of its predecessor. We are always apt to think that what was done before our time amounted to very little. The farther away the time under consideration happens to be, the surer are we that it cannot have been of much significance for progress. If the problem to be considered in the olden times is one that we think we are only solving now, then we are sure that not only they did not solve it in the past but, that they did not even think of it. "We are the heirs of all the ages in the foremost files of time." In no department of education is this perhaps truer than in medicine at the present day. We are prone to think that the present lengthening of the medical course and especially the insistence on a good preliminary education before medical study can be commenced, is an affair certainly of the last half century, if not of even more recent times. Nothing could well be more false than this, for at least three or

*The material for this article is condensed from a chapter on Post-Graduate work at the Medieval Universities of a book *The Thirteenth, Greatest of Centuries*, by Dr. Walsh, published by the Catholic Summer School Press, New York City. The Thirteenth Century gave us the Gothic Cathedrals, the Universities in the form in which we now have the great technical schools, in which the arts and crafts developed the greatest literature of any like period, and the origin of all our legal rights and privileges.—Author.

four times in history very definite and determined and even successful efforts have been made to regulate medical study, and then after a time, unfortunately, the old abuses have crept in and the whole business of reform has had to be done over again.

When after a prelude like this I proceed to call attention to the fact that the regulation of medical education occupied men's minds in very much the same way at the beginning of the fourteenth century as it does now, at the beginning of the twentieth century, it will be thought at once, that I am some one with an axe to grind about the Middle Ages, and that whatever is to be said for such a far-fetched statement is due to the over enthusiastic ardor of a devotee of things medieval. At once there comes the thought that no matter how much time they spent at medicine in the fourteenth century, since they did not study the things that we are now studying, it does not make very much difference how they regulated medical education. It is ordinarily said that university medical students occupied themselves with disputations over all sorts of theoretic medical questions, but did nothing practical and learned nothing practical during their university course. It is not surprising that such an opinion should be abroad, but it is founded entirely on a lack of knowledge of the matters studied in the medical schools in the Middle Ages. I often quote that fine expression of Josh Billings in this regard: "There is nothing that makes men so ridiculous as the knowing so many things that aint so." We have known a whole pile of things "that aint so" with regard to medical education.

As a matter of fact medical students occupied themselves with very much the same thing in the fourteenth century that ours do now. Until the old medical text books of the thirteenth and fourteenth centuries were printed by private enterprise and munificence and by various old text societies the thought was more or less excusable that medical education in the Middle Ages did not amount to much. At the present time such a mistake would be unpardonable for any scholar who pretends to first hand knowledge of this period. In his address before the Congress of Arts and Sciences at St. Louis, two years ago, Prof. Clifford Allbutt, Regius Professor of Physic at the University of Cambridge, reviewed the progress of medicine and surgery down to the sixteenth century. Some of his utterances about the ordinary teaching in the medical schools of Italian Universities during the thirteenth century must be a source of supreme surprise to those who have been accustomed to think of ignorance of science or neglect of observation as the distinguishing marks of medical education of that time.

There is scarcely a modern idea in medicine or surgery that was not seriously touched upon by distinguished teachers of medicine in the thirteenth century. William of Salicet, and Lanfranc anticipated many of the ideas that are supposed to be essentially modern. They insisted on the necessity for ligatures for bleeding vessels, of the advisability

of picking up the ends of severed tendons and nerves and suturing them together, of the danger of wounds and operations in the regions of the neck, of the hardening of the kidneys that is associated with dropsy, the importance of certain forms of social diseases supposed not to have been recognized until long after their time; and they did their teaching by means of cases and not as it is usually asserted by discussions on Hippocrates and Galen. The employment of opium with its scientific limitations began in the thirteenth century, and a form of anaesthesia introduced by Ugo da Lucca was much more widely employed in surgical operations than modern students of medical history have had any idea of until very recent years.

In a word it may be said that the student of medicine of the thirteenth century had to devote himself to very nearly the same departments of science as those which occupy his colleagues of the present century. If anything his knowledge of the allied sciences had to be, with due allowance for the times, wider than that of his fellow-student of the twentieth century. Diseases were supposed to be much more due to climate and to the conformation of the earth, to soil, and the like at that time, and these had to be subjects of study. At the end of the fourteenth century antimony was probably introduced into medical practice and it seems not unlikely that other minerals had been employed before this and that medical students were expected to know something about them. Of plants they were expected to know in a general way much more than the modern medical student, to whom botany is not considered of much importance, and of zoology they probably had at least as great practical knowledge, since many of their dissections were made on animals, and the differences in structure between them and man were pointed out when the animal anatomies or human dissections at the universities were made.

With this premise most people will be much more willing to consider the subject of how they taught medicine during these centuries than before. Fortunately we have some documents which show us exactly what they tried to accomplish in the matter of regulating the practice of medicine. There is for instance a bull of Pope John XXII, who was pope from 1316-1330, in which he approves the establishment of medical courses in the University of Perugia, which belonged to the Papal States, and in addition makes certain suggestions which were really formal statutes, because he was the civil ruler as well as the ecclesiastical authority, in order to maintain the standards of education and secure the best possible arrangement of the medical course at the new university.

This bull was issued February 18, 1321:

"While with deep feelings of solicitous consideration we mentally revolve how precious the gift of science is and how desirable and glorious is its possession, since through it the darkness of ignorance is put to flight and the clouds of error completely done away with so that the

trained intelligence of students disposes and orders their acts and modes of life in the light of truth, we are moved by a very great desire that the study of letters in which the priceless pearl of knowledge is found should everywhere make praiseworthy progress, and should especially flourish more abundantly in such places as are considered to be more suitable and fitting for the multiplication of the seeds and salutary germs of right teaching. Whereas some time ago, Pope Clement of pious memory, our predecessor, considering the purity of faith and the excellent devotion which the city of Perugia, belonging to our Papal states, is recognized to have maintained for a long period towards the church, wishing that these might increase from good to better in the course of time, deemed it fitting and equitable that this same city, which had been endowed by Divine Grace with the prerogatives of many special favors, should be distinguished by the granting of university powers, in order that by the goodness of God men might be raised up in the city itself pre-eminent for their learning, decreed by the Apostolic authority that a university should be situated in the city and that it should flourish there for all future time with all those faculties that may be found more fully set forth in the letter of that same predecessor aforesaid. And, whereas, we subsequently, though unworthy, having been raised to the dignity of the Apostolic primacy, are desirous to reward with a still richer gift the same city of Perugia for the proofs of its devotion by which it has proven itself worthy of the favor of the Apostolic See, by our Apostolic authority and in accordance with the council of our brother bishops, we grant to our venerable brother, the Bishop of Perugia, and to those who may be his successors in that diocese the right of conferring on persons who are worthy of it the license to teach (the Doctorate) in canon and civil law, according to that fixed method which is more fully described and regulated more at length in this our letter.

"Considering, therefore, that this same city, because of its convenience and its many favoring conditions, is altogether suitable for students and wishing on that account to amplify the educational concessions hitherto made because of the public benefits which we hope will flow from them, we decree by Apostolic authority that if there are any who in the course of time shall in that same university attain the goal of knowledge in medical science and the liberal arts and should ask for license to teach in order that they may be able to train others with more freedom, that they may be examined in that university in the aforesaid medical sciences and in the arts and be decorated with the title of Master in these same faculties. We further decree that as often as any are to receive the degree of Doctor in medicine and arts, as aforesaid, they must be presented to the Bishop of Perugia, who rules the diocese at the time, or to him whom the bishop shall have appointed for this purpose, who having selected teachers of the same faculty in which the examinations are to be made, who are at that time present in the university to the number of at

least four, they shall come together without any charge to the candidate and, every difficulty being removed, should diligently endeavor that the candidate be examined in science, in eloquence, in his mode of lecturing, and anything else which is required for promotion to the degree of doctor or master. With regard to those who are found worthy their teachers should be further consulted privately, and any revelation of information obtained at such consultations as might redound to the disadvantage or injury of the consultors is strictly forbidden. If all is satisfactory the candidate should be approved and admitted and the license to teach granted. Those who are found unfit must not be admitted to the degree of doctor, all leniency or prejudice or favor being set aside.

"In order that the said university may in the aforesaid studies of medicine and the arts so much more fully grow in strength, according as the professors who actually begin the work and teaching there are more skillful, we have decided that until four or five years have passed some professors, two at least, who have secured their degree in the medical sciences at the University of Paris, under the auspices of the Cathedral of Paris, and who shall have taught or acted as masters in the before-mentioned University of Paris, shall be selected for the duties of the masterships and the professional chairs in the said department in the University of Perugia, and that they shall continue their work in this last-mentioned university until noteworthy progress in the formation of good students shall have been made.

"With regard to those who are to receive the degree of doctor in medical science, it must be especially observed that all those seeking the degree shall have heard lectures in all the books of this same science which are usually required to be heard by similar students at the universities of Bologna or of Paris, and that this shall continue for seven years. Those, however, who have elsewhere received sufficient instruction in logic or philosophy having applied themselves to these studies for five years in the aforesaid universities, with the provision, however, that at least three years of the aforesaid five or seven-year term shall have been devoted to hearing lectures in medical science in some university and according to custom, shall have been examined under duly authorized teachers and shall have, besides, read such books outside the regular course as may be required may, with due observation of all the regulations which are demanded for the taking of degrees in Paris or Bologna, also be allowed to take the examination at Perugia."

Certain features of this bull are especially noteworthy in the light of modern educational experiences. The pope was confirming the establishment of a new university. It was to be as he realized, a smaller university in size, but he did not want its standard of education to be lower than that of the great universities. For this reason he insists specifically in the bull that the license to teach, the equivalent of our modern doctorate in law, letters, science and medicine, shall not be given except

after the completion of a course equivalent to those given in these subjects in Paris or Bologna, the great universities of the time, and that the examinations shall be quite as rigid and shall be conducted under conditions that, as far as human foresight can arrange, shall preclude all possibility of favoritism of any kind entering into the promotion of candidates for these degrees. The fact that oaths were required in the hope that standards would be thus maintained shows how seriously the subject of education was taken at this time, when, if we would believe some of those who depreciate the Middle Ages, ecclesiastical efforts were mainly occupied with the attempt to keep the people as ignorant as possible.

This phase of the papal decree is all the more interesting when it is viewed in the light of some modern educational developments. A few years ago there was a very general complaint that the doctorate in philosophy was conferred too easily, especially by the minor universities, and that as a consequence this degree had come to mean very little. It required a distinct crusade of effort to raise standards in this matter, and even at the present time the situation is not entirely satisfactory. A very curious element in the situation lies in the fact that, in comparison to the number of students, certain of the smaller universities conferred this degree much more frequently than the larger universities. This was found to be true even among the German universities, where I believe that, according to statistics, the little University of Rostock, in Mecklenberg, confers the degrees proportionately oftener than any other German university. Pope John XXII was evidently endeavoring to prevent any such development as this, or perhaps he was trying to remedy an abuse which he knew had already crept in, for all of his bulls on educational matters insist, with no little emphasis, on the necessity for the maintenance of a high standard of educational requirements as regards the length of time in years, the books to be read and lectures attended, as well as on the rigid yet absolute fairness of examinations.

There are other bulls and decrees of this same pope establishing medical courses in the University of Cahors, his birthplace, and encouraging the study of medicine at the University of Rome, from which city, the popes were then absent being at Avignon, and all of them couched in practically the same terms. John paid out of his revenues the salary of the Professor of Physic at the University of Rome and as is well known this term meant medicine. Yet John XXII is said to be the pope who forbade the study of chemistry and did many other things to discourage the development of science. What he forbade in prohibiting what were called "alchemyes" at that time, was not scientific investigation, but the pretended making of gold and silver, by which poor people were being robbed of their money. There were fakes in those days as well as in ours and the pope was protecting foolish speculators as far as he could. The story of what he tried to do for medicine is the best example that I know, of how long ago they began to regulate medical education in just the same way that we are trying to do now, and that their success was only temporary is but another proof of how careful we shall have to be of any progress that we may make in this line.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

BLOOD FORMATION IN THE LIVER AND SPLEEN IN EXPERIMENTAL ANAEMIA.—Morris. (*Bull. Johns Hopkins Hospital*, June and July, 1907).—In view of the histological changes in the liver and spleen of individuals dying from the various forms of anæmia, the author conducted a series of experiments upon rabbits with a view of determining whether or not these same changes occurred in the animal by the administration of substances known to cause anæmia. Upon the death of the animals, microscopic examinations were made of the bone marrow, spleen, liver, kidneys and lungs. The author came to the conclusions that the anæmia produced in rabbits by the administration of pyrodin, either in the stomach or under the skin, is one with a high color index and results from injury to certain of the red blood corpuscles which are then removed from the circulating blood by phagocytes in the spleen, bone marrow and liver. This resembles the condition found in pernicious anæmia in man.

The increased blood destruction leads to increased (compensatory) blood formation.

The stimulus to increased regeneration of the blood, whatever its nature may be, leads to heightened activity of the hæmatopoietic function of the bone marrow, the occurrence of myeloid elements in the spleen and occasionally in the liver.

The changes occurring in the liver and spleen in the experimental animals are similar histologically, so far as the hæmatogenetic cells are concerned, to those seen in the normal rabbit's embryo at certain stages in its development, and it may be assumed, therefore, that the spleen and liver have taken up their embryonic function, *i. e.*, hæmatopoiesis.

The return of the embryonic function is in the reversed order of its disappearance.

Hæmosiderosis of the organs occurs as in pernicious anæmia of man.

The weight of experimental evidence favors the theory of increased blood destruction (the toxic theory) rather than that of decreased blood formation as the chief factor in the production of primary pernicious anæmia in man.

VEGETABLE OR MEAT DIET IN HYPERACIDITY.—Schloss (*Archiv. f. Verdauungskrankheiten*, Part 3, Vol. 13).—It was formerly generally supposed that in view of the fact that albumins neutralized the acid in the stomach, and that an albuminous diet was indicated in cases of superacidity, but in view of the expressions of Jurgensen and others, there has been a material change in the popular views. He argues that while the albumin neutralized a portion of the acid, at the same time it

stimulated the mucous membrane to an increased production of the same. This the author has attempted to demonstrate through a series of experiments upon animals in which he produced the Pawlow stomach, and succeeded in doing so to his entire satisfaction. His object was to show that in the treatment of these cases, success depended not so much upon the neutralization of the acid already produced, as the prevention of its further production. That diet is best which produces the least stimulation on the secretory apparatus. He found in these experiments that the vegetable diet called for less secretion for a shorter length of time than the meat diet. That meat alone stimulated the mucous membrane to a far greater production of acid and that a mixed diet produced an amount between that of the vegetable and the meat diet. He recommends in cases of hyperacidity a vegetable diet admixed with small amounts of albumin.

SERUM DIAGNOSIS IN LUES, TABES AND PARALYSIS THROUGH SPECIFIC PRECIPITATES.—Fornet (*Muenchner Med. Wochenschrift*, No. 30, 1907).—Through a series of experiments Fornet has demonstrated to his own satisfaction, that the serum from paralytics and tabetics give constantly with the serum of syphilitics, a positive precipitate reaction, and vice versa. He believes that by this means it is possible to make a positive diagnosis as to the syphilitic origin of paralysis and tabes. In a majority of the cases in which this method has been tested, spirochætæ have been found, and on the other hand, cases in which spirochætæ were found the "specific precipitates" could be demonstrated.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF
CARL FISCH, M. D.

ABOUT R. E. WRIGHT'S OPSONINS AND THE THERAPEUTIC METHODS OF WRIGHT IN INFECTIOUS DISEASES—M. Loehlein (*Muench Med. Woch.*, 1907, No. 30).—There is no doubt that the work of Wright and his enthusiastic followers has opened up a wide field of research and investigation. The subject of his work is one that is not primarily original with him, but was simultaneously established and inquired into by other observers, mainly Neufeld. The difficulty in understanding the phenomena concerned was expressed by the latter by giving the bodies acting in it the name of bacteriotropic substances, acting on bacteria to make them susceptible to the phagocytic action of leucocytic cells. Any explanation of the nature of the process was for the time not attempted because the necessary data for a definite attack on the problem was out of reach. We already knew that in certain infectious diseases these bacteriotropic substances played a great part, for the action of Marmorek's antistreptococcus serum was attributed to their qualities. These qualities, however, remained absolutely unknown in their essential nature, and even the work of Hektoen has not brought us nearer to an understanding. All the established facts following from the work done by Neufeld, Wright,

Hektoen and many others, consist only in the demonstration of substances in the serum acting on bacteria in a way to make them accessible to phagocytosis. It is not considered that phagocytosis exists without the presence of the bacteriotropic substance. It is not regarded that the meaning of phagocytosis is yet a very much discussed problem and that no uniformity of opinion exists about it. Starting from the experience that normal serum contains regularly opsonin in a nearly equal quantity in every case, Wright, assuming the role of phagocytosis as identical with the production of immunity, conceived the idea, that the quantity of bacteriotropic substances, or opsonins, had great value in estimating the probable course of a bacterial infection, and that the latter could be influenced or altered by the increase or decrease in the blood of these substances. An increase would mean improvement of the protective and defensive weapons of the organism; a decrease a victory of the infecting bacteria. By his vaccine method he tries to increase the quantity of opsonins and to control the administration of the vaccine by the opsonic-index, as he calls it. His theoretic basis for this procedure is not unobjectionable, which accounts for the hesitation of other than English and American scientists to adopt his conclusions. Loehlein, in the paper reviewed here, has given a concise representation of the actual condition of the opsonic question. Wright believes that the problem of bacterial infection is solved by the assumption that pathogenic bacteria in each case multiply under the influence of a decrease of the "bacteriotropic pressure" in a certain area of the organism, where anti-bacterial substances are not present, or at least less in quantity than in the circulating blood. Thus he explains that bacteria are not destroyed by the combined action of opsonins and leucocytes. That such conditions frequently obtain is demonstrated in a number of infections by Wassermann and others. The difference between the views of Wright and the facts found is, that the local immunity studied is due to tissue immunity, and not to the absence of any anti-bacterial bodies in the tissue fluids. Wright's vaccine infections are intended to increase the amount of opsonins that reach the focus of infection and then stimulate phagocytosis.

In the first place it must be said that phagocytosis, spontaneous or opsonic, need not lead always to the death of the bacteria. A famous and very important instance of this are the plague bacilli. A more important objection is the well known fact that pathogenic bacteria entering an animal body change their biologic character considerably, so that in a short time where the natural protective substances can act against them, they become insusceptible to them. They are practically immune. This condition has been studied by Cohn on the typhoid bacillus, by Bail in his studies on aggressins, by Bordet for streptococci, by Metchnikoff for plague bacilli, by Silberberg for chicken cholera. For tubercle bacilli similar observations have been lately made by Loewenstein. The objection against Wright is that bacteria in the test tube behave quite differently from what they do in the living animal body. While, for instance, anthrax bacilli, directly taken from an infected animal, can in no way be made susceptible to phagocytosis, cultures of the same bacilli on nutrient media are promptly taken up by the leucocytes. The changes that bacteria undergo within the body are considered by Theobald Smith as protective sheaths or coverings. For many bacteria actual evidences of this

kind are well known. Wright's observations in the test tube have no binding meaning for the processes going on in the living body. Any attempt to solve the problem of bacterial infection that does not consider the biologic changes of the bacteria within the body, must a priori be insufficient. This obtains also for Wright's theory.

It is possible that Wright's opsonic-index in the future may be used as a practical indicator in immunity-reactions. Up to this time, however, our knowledge about the significance of opsonins and phagocytosis is not sufficiently deep to allow of a final conclusion. One main question is that about the phagocytic and bactericidal capacities of the leucocytes themselves. It is certain that the latter can without the interference of body-fluids enclose and digest pathogenic bacteria. That living bacteria are phagocytosed is today established. Certain bacteria, however, that, living, are insusceptible to phagocytosis, behave the same way after being killed by heat. On the other hand, it has been demonstrated that washed white corpuscles will take up, for instance, cholera vibrios and digest them in the same way as their destruction occurs in the peritoneal cavity of a guinea pig. The character of the effect of opsonins on bacteria is absolutely obscure. The assumption by some that opsonins represent the normal amboceptors of every serum cannot be accepted. Are the opsonized bacteria actively destroyed by the phagocytes, or must they be prepared for phagocytosis by normal or artificial bacteriolytic substances? These are problems that have not been approached as yet. It is certain that the leucocytes, although in their extract no bactericidal substances have been demonstrated, can actively digest bacteria, as does immune serum. Buxton, in his experiments on peritoneal absorption, has called attention to the importance of phagocytosis by assuming that when destroyed and digested within the leucocytic cytoplasm, the bacterial endotoxins are eliminated, while, set free in the body fluids, they would be absorbed and cause intoxication.

The subject of phagocytosis and opsonins is in so many directions, as yet altogether problematic. Before the intimate nature of these phenomena is established, the results that are claimed for their practical therapeutic application, can be considered only with hesitation as evidence for the truth of Wright's theories. To establish a scientific basis for them is not beyond possibility; work is going along on this line today by unbiased observers, and will in time decide the question.

DISCUSSION OF PLEHN'S PAPER ABOUT PERNICIOUS ANEMIA.—R. Plehn (*Berl Klin. Woch.* No. 24, No. 25).—The subject of pernicious anemia has been for many years one of the most discussed problems of pathology. Its etiology is today as obscure as it ever was. The conception of intestinal origin founded by Hunter and lately strongly emphasized by Grawitz, is deceiving, as the basis of it, the intestinal and gastric lesions, may be just as well a consequence as the cause of the disease. The paper of Plehn, cumulating in the establishment of two different classes of pernicious anemia, as well as single opinions brought out by discutants will not be reviewed here. They bring nothing new, nothing to come nearer the etiologic, biologic or organogenetic sides of the question. The most surprising feature of this paper and the discussion held on it is the uncertainty about the diagnostic side of the question. Long treatises were

given on the value of the megaloblasts, and the fact brought out that megaloblasts have been observed in cases that certainly were not pernicious anemia. In the whole discussion there was a wavering of opinion how the blood picture must be constructed to form that of pernicious anemia. The leucopenia, the relative lymphocytosis, were all made the objects of long speeches, while not a word was said about the basal peculiarity of the disease, the character of the red corpuscles. Ehrlich's classic work on the disease, that most likely was not all that was taken as it and named as such by Bierman, was only utilized in reference to megaloblastic forms, poikilocytosis and normoblasts. The main feature that forms the essential character of the blood in pernicious anemia, that represents in itself the disease without megaloblasts and other anomalies, and that at one glance at a specimen reveals the condition, is left out of discussion, although it represents the type that by Ehrlich was marked as pernicious anemia, the type that is separated from all other anemic conditions by it.

Without any prominent changes in the other anomalies, the red cells are always much larger in the average; they stain intensely, no anemic rings are seen in spite of the greatness of the anemia. They are not only larger in the average than the normal erythrocytes but they are not round; they are always more or less ovoid, or in other words show differences in length and breadth. The presence of this shape together with an intense staining capacity, alone establishes the pathologic condition. This character was Ehrlich's criterion in separating from other severe anemias a group, that by its course is identical almost in all cases. Otherwise the diagnosis of pernicious anemia would become a subject resembling the diagnosis of so many so-called typhoidal and malarial disturbances. If pernicious anemia is talked about as a pathologic unit, the red corpuscles decide the question. The post-mortem lesions of these real pernicious cases are always identical. Ehrlich's suggestion of a return to embryonic blood formation is very significant, as in fact, the corpuscles have all of the characteristics of the corpuscles up to the fifth month of fetal development.

DIAGNOSIS

IN CHARGE OF

ALBERT E. TAUSSIG, M. D.

A DIAGNOSTIC SYMPTOM IN APPENDICITIS.—Blumber (*Muench. med. Wochens.*, 1907, No. 24).—One of the most important questions that arise in connection with the early diagnosis of appendicitis relates to the degree of participation of the peritoneal covering. During the last year and a half the writer believes himself to have noted a new symptom, the presence of which points to peritoneal involvement. In the typical case of early appendicitis, gentle pressure over the affected area produces pain

which ceases as soon as the pressure is relaxed. When, however, instead of being gradually withdrawn, the hand that exerts the pressure is suddenly removed, the resilient tissues are thrown into more or less vibration and this in itself may produce a pain which the patient can nearly always clearly distinguish from the original pressure-pain. The writer believes that this pain, produced by the sudden removal of the palpating hand, is dependent upon the inflammatory involvement of the peritoneum. If it is more intense than the pain produced by the palpation of the appendix, the infection is probably progressing; if less intense the disease is retrogressing. The worst cases are those in which the symptom appears suddenly and with great intensity. The writer's experience is not based on a great mass of material but he requests that other clinicians give the method a trial.

CUMMIDGE'S TEST FOR PANCREATIC DISEASE.—Cummidge (*Edin. Med. Jl.*, 1907. No. 2).—In reply to Haldane who had denied to Cummidge's test any diagnostic significance, the latter replies, reiterating his claims for the test and giving a new and improved modification. The importance of the whole question may warrant a somewhat detailed account of the test. A sample of the 24 hour urine is tested for albumen, sugar, bile and other abnormal constituents and if found free from them, is carefully filtered. To 40 c.c. of the clear urine 2 c.c. strong hydrochloric acid are added and the whole boiled for ten minutes in a long necked flask surmounted by a funnel. Cool, and add water to bring the more or less concentrated fluid back to 40 c.c. Add slowly 8 grammes lead carbonate and neutralize if necessary. Filter until clear through a moist filter paper. Shake the filtrate with 8 grammes of basic lead acetate and again filter until clear. Remove the lead by shaking the filtrate with 4 grammes of powdered sodium sulphate, boil, cool, and filter. To 10 c.c. of the clear filtrate add 7 c.c. distilled water, 2 grammes sodium acetate, 0.8 grammes phenylhydrazin hydrochlorate, and 1 c.c. 50 per cent acetic acid. Pour into a small flask with funnel condenser, boil on the sand bath for ten minutes, filter hot through a moist filter and if necessary add to the filtrate enough water to make 15 c.c. When the test is positive a precipitate forms on standing a few hours; in doubtful cases it must be allowed to stand over night. The precipitate is flocculent, bright yellow in color and microscopically consists of long, yellow, hairlike, flexible crystals, readily soluble in 33 per cent sulphuric acid. It thus clearly resembles a modified phenylhydrazin test for sugar. In order to exclude the latter as a possible source of error, the test should be done with a second sample of the same urine, omitting, however, the first step of boiling with hydrochloric acid. If sugar is present the yellow crystals will form even so. Cummidge declares his test positive only if the crystals are obtained in the manner first described but fail to form when boiling with hydrochloric acid is omitted. Pancreatitis regularly gives a positive reaction; pancreatic cancer in about one-fourth of the cases examined. Other conditions that may be confused diagnostically with pancreatitis fail to give the reaction. It will be seen that while the test is a little laborious, all the manipulations are very simple and require no apparatus but flasks, test-tubes and funnels.

PALPABLE AND MOVABLE KIDNEYS IN INFANCY.—Leiner (*Zeitschr. f. klin. Med.*, 1907, No. 62).—As the result of a long series of observations, the writer concludes that kidneys which are distinctly palpable and movable, should not be considered pathological in infancy and early childhood. They can be felt in every case in which accidental causes, such as spasm of the abdominal muscles, do not interfere with palpation. The attempt of Blum and others to interpret a palpable kidney in early childhood is a beginning floating kidney is not justifiable.

A NEW FLUID FOR THE HAEMACYTOMETER.—Edington (*Lancet*, 1907, July 13).—A diluting fluid, which has some points of superiority over the solutions ordinarily used, may be prepared as follows: Take neutral sodium citrate, 7.5 grammes, formalin 2.0 cubic centimeters, dahlia (Gruebler's) 0.03 grammes, chloroform 5 drops and distilled water 250 cubic centimeters. Rub up the stain with a little water, then add the rest of the water and finally the other constituents. Allow the mixture to stand for a few days and decant. It is particularly useful for counting red blood corpuscles.

THERAPEUTICS.

IN CHARGE OF

WM. ENGELBACH, M. D.

THE TREATMENT OF ANAEMIAS.—Sittmann (*Deutsch. Med. Woch. No. 52, Rep. Ther. Monatschr.* July 15).—Excluding the secondary anaemias in tuberculosis, nephritis, carcinoma, anchylostomiasis, etc., the therapy of anaemic conditions can only be symptomatic as long as we are unable to distinguish more accurately the etiology of the various pathologic conditions of the blood. This holds true in our efforts to treat the underlying causes of secondary anaemias. The therapeutical agents may be conveniently classified according to symptoms as they arise. General dietetic and hygienic rulings which would influence the whole organism must be considered. In cases of acute and chronic posthaemorrhagic anaemias, a diminution of the total amount of blood is the most striking feature. Such measures are therefore indicated which would make up the total loss of blood. Of the numerous methods of transfusion only Fiemssen's can be considered, *i e.*, normal blood is taken from one of the veins of the arm by means of a syringe and is injected directly into the vein of the patient. Transfusion of blood of different species, as well as the intravenous or subcutaneous injection of defibrinated human blood, have been discarded. The indication for cardiac insufficiency which, excepting the lack of oxygenation, is the greatest danger in severe hemorrhages, is hypodermoclysis of sterile salt solution. This replaces the amount of fluid lost, and also stimulates the immigration of erythrocytes deposited in the blood-making organs. The blood serum is thus refilled with cells and the function of oxygenation restored. Of the quantitatively changed constituents of the blood, only the haemoglobin can be directly replaced by therapeutic means. This is accomplished by giving iron. As the percent-

age of haemoglobin is decreased in every form of anaemia, iron medication is always indicated. Only in the cachectic stage of progressive pernicious anaemia untoward effects have been ascribed to iron. Most striking are the results in chlorosis, in which we simply have to deal with changes in the haemoglobin. In other anaemias the administration of iron as an adjuvant to other therapeutical agents is indicated. Complicated organic preparations are superfluous, for iron in any form, organic or inorganic, is absorbed. The writer has had good results with Blaud's pills (3 per diem.) In severe cases at the same time liquor ferri album (51 to 355 per diem) is added. Thus the average daily dose of 0.1 g. metallic iron contained in 5 Blaud's pills or in 25 g. liquor ferri album is greatly exceeded. In administering iron, however, it is better to give too much than too little. It is of utmost importance to avoid gastric disturbances. It is far better to discontinue the iron for some time if they occur. The writer does not believe that iron as such causes the dreaded pyrosis and gastric pains. They are due rather to the high percentage of alcohol contained in some of the organic preparations, to the excessive hardness or to the great bulk of pills or tablets. He sometimes observed the gastric disturbances disappear by directing the liquor to be greatly diluted before administering, or by ordering the pills to be coated with chocolate instead of having them sprinkled with lycopodium or pulvis liquorice. Iron preparations should only be given after meals. Injury to the teeth only manifests itself in cases where iron is administered for too long a period. Another group of medicinal efforts tends to increase the activity of the blood-forming organs. Concerning haematopoiesis, arsenic only is considered. Thus treatment with arsenic holds exclusive rights in those diseases of the blood, the existence of which we perceive, is a deranged function of the spleen, bone-marrow and lymphatics, i. e., progressive pernicious anaemias and leukemias. In chloroses of long duration and simple chronic anaemias it may be advantageously employed as an aid to the process of regeneration. For internal use the liquor kali arseniosi is most adequate, while for subcutaneous administration the harmless sodium arseniosum is given the preference. Natrium caco dylicum, a later pharmaceutical product, may be used for both methods of administration. It does not matter in which form or way arsenic is employed, it should be given in small doses in the beginning of treatment and gradually increased. Symptoms of intoxication must not be forgotten, and treatment should at once be discontinued if they manifest themselves. In the treatment of leukemias with Roentgen-rays we have of late obtained the means which enable us to diminish the pathologic hyperactivity of the blood-forming organs; and if permanent cures have as yet not been obtained, marked improvement has been reported. Utmost care of dosage is necessary, as the function-inhibiting effect upon the spleen and bone-marrow might go as far as to even harm the normal function, to cause a diminution of the red cells, and thus actually make present conditions worse. The most difficult task for the physician in treating anaemias is the dietary regulation. Rest in bed is necessary for every anaemic person. By being kept in bed an exaggeration of the processes of exchange brought about by work and cooling is avoided, and the introduced calories may be almost completely utilized in the processes of reconstruction. Absolute rest in bed should, under no circumstances, be discontinued until

the percentage of haemoglobin has reached 65 to 70 per cent; even then rest in bed for several hours after dinner should be taken. Later, a sojourn in one of the "steel baths" in the mountains, or on the seashore, may be conveniently considered. As for dietetics only general recommendation can be given. An abundant mixed diet is to be recommended. Foods containing too much albumen should at best be discarded, as the increase of processes of oxydiation brought about by them might act injuriously. The writer makes it his practice to give nourishment five times a day. Great attention should be given to regularity of the bowels. Hydrotherapeutic measures as a rule may be excluded. During convalescence, mild applications such as frictions, baths, etc., may be employed. Cold water is to be avoided. Massage is only indicated in chlorotics with tendency to obesity.

TREATMENT OF CONSTIPATION.—Lewandowski (*Ther. der Gegenwart*, July, 1907).—In this article the author considers the later theories regarding the cause of chronic constipation, and bases his treatment upon these theories combined with the knowledge gained from his own personal applications of them. Kohnstamm's theory fixes the cause for chronic constipation as due to a substance derived from the decomposition of albumin which decreases the peristalsis. He therefore limits or interdicts the use of meats. The author admits the plausibility of this theory, but says that it cannot be accepted on account of the fact that the clinical experience proves that it is not constant in all the cases. He maintains that the chemical cause of constipation therefore has not been established. A. D. Schmidt has advanced a mechanical theory. This theory depends upon the absence of an indigestible residue for the cause of constipation. When, for any reason, there is not enough residue left in the large intestine to stimulate peristalsis by the mechanical irritation, constipation will be the result. He has used this theory as a basis for his treatment with Regulin and Pararegulin. These preparations are cascara agar solutions, which depend for their efficacy on their property of greatly increasing in volume by the assimilation of water. Strassberger's theory places the cause of constipation upon the decreased number of bacteria which he found present in the feces of obstipation. The author agrees with Klein that all organic causes and constipation due to primary diseases in other systems must of necessity be excluded by diagnosis. He mentions the fact that insomnia is one of the most common symptoms of chronic constipation. This is due to intestinal unrest and distention, and is usually relieved by the treatment of its cause. Disturbance of the circulation of the large intestine is an exceedingly common cause. Of eleven hundred patients he attributed the cause to dilated veins and capillaries in 153 or 17 per cent. This is found to be present more frequently in men than in women and more often in those suffering from obesity. He agrees with Boas that varicosities of the veins, especially about the rectum, are a predisposing cause for carcinoma in that region. The treatment of obstipation is divided into two parts; (1) The material to be given to the patient, and (2) the manner of giving this diet in the proper way and time. It is self evident that eating slowly, proper mastication and dissolution with saliva, besides the hygienic care of the mouth and teeth, are to be first considered. An important matter concerning the diet is the per-

sonal idiosyncrasy that different people have for different food stuffs. For example, mother's milk produces in some infants constipation, while in others it produces diarrhea. This holds true in adults with cow's milk. An addition of salt or sugar, cooking the milk a longer or shorter time, sterilization of it, or drinking it hot or cold, or other modifications may influence its effect some, but usually only slightly. Cocoa and coffee produce mild colics in some people. This much neglected personal effect of food stuff upon the individual should always be inquired into and cannot be ignored in any of the chronic cases. In persons suffering from obesity, instead of reducing the fluids it is better to institute smaller meals and more solid diet given at shorter intervals. The author agrees with Boas that in these patients, as well as others, suffering from conditions modifying the position of the abdominal organs (pregnancy, perineal lacerations, neurasthenia, emaciation) that rest cure is indicated and produces very favorable results. Besides the quality of the diet, the time and amount must be specified. Some food stuffs should be taken in the morning, others at night, some with and some without water, etc. This also holds good with medication. In general substances which increase peristalsis are more effective if given when the stomach is empty. Those substances which increase peristalsis by mechanical irritation of the intestines are only slightly different from an ordinary stimulating cathartic. Under this head are Regulin and Pararegulin. They are indicated in patients confined to bed in whom a soft semi-solid diet is to be given; for example, ulcer of the stomach during and course of appendicitis. Schmidt's method of giving with them apple sauce and potato soup can be recommended. Other vegetables and fruits are also indicated. This method is also very beneficial with fat people. The ordinary cathartics are considered necessary evils. If they are used at all they should be changed frequently so as to retain their effect. Enemas, on account of their decreasing effect, are considered useless in the chronic cases. Among the many beneficial non-medical procedures are massage and gymnastic exercises. Abdominal massage while the diaphragm is fixed by forced inspiration is considered very helpful. Gymnastic exercises as described by Schreiber and Hughes are the most valuable. Hydrotherapeutic measures are best carried on in the sanitarium. They consist of hot and cold packs and slapping, hot and cold sitz baths, and local sprays and douches. In order to encourage proper local circulation, restricting clothing about the waist and pelvis should receive attention. Psychotherapy is indicated in special cases. Flatulent colic (*colica flatulenta*) should receive special attention. This occurs in two varieties, the acute and the chronic. In the acute form the symptoms are pain and distention of the abdomen. A characteristic hot burning painful sensation in the lumbar region, which is considered pathogenic by the author. Besides these symptoms, anorexia, nausea, and belching are complaints. A small pulse and a slight increase in temperature is usually present. Occasionally peristalsis is demonstrable. No meteorism or other abdominal findings are present. The treatment consists in absolute rest, hot compresses to the abdomen and lumbar region. Fluids in the form of lemonade, and mineral waters should be given in large amounts. The ordinary carminatives have no effect on the condition. Cathartics and enemas are absolutely counterindicated. Under the above treatment the symptoms usually subside in six to eight

hours, and the patient is absolutely comfortable. The acute form usually comes on very suddenly, in people who rarely suffer from obstipation. It is frequently found present with heart disease. Symptoms are insomnia, pain in the abdomen and back, frequent desire and effort to defecate without effect, anorexia, and colic of a more or less severe degree. The treatment is as follows: Diet is the most important. Small, frequent meals interdicting foodstuffs which do not agree with the patients is the best general rule. Lemonade, hot tea, peppermint, kimmel, annis, fennel, etc., are indicated. Hot applications to the abdomen help to relieve the symptoms. Oil per mouth and in difficult cases lavage of the stomach usually produce the desired effect. In those cases of constipation due to a mechanical or anatomical condition, for example, a chronic localized peritonitis following appendicitis, salpingitis, paranteritis, injections of thiosinamin is considered the best treatment. (Thiosinamin is given hypodermically and per mouth. Because of the softening which it causes in sclerotic tissue it is supposed to relieve the mechanical obstruction present in this form of constipation.—Ed.)

VERONAL IN VOMITING OF PREGNANCY.—Rowland (*Ther. Monatshr.*, July, 1907).—In a case of obstinate vomiting in the second month of pregnancy, which resisted all means and had already led to a considerable decline of strength, the writer gave 2.0 veronal in enema. The patient fell asleep lasting 11 hours, and after awakening had no more vomiting for 25 hours. As vomiting occurred again afterwards in the same degree of intensity the same dose was given again with like results. Later on vomiting appeared only a few times and disappeared entirely after one month.

VENESECTION.—Mendel (*Ther. d. Gegenwart*, July, 1907).—The author after giving a history of venesection, shows how this method of treatment once discarded has been again brought into use with specific indications as one of the best adjunct methods for a number of conditions. After giving a detailed description of the technique of performing venesection, and methods for overcoming some of the difficulties which present themselves in performing it successfully, he gives the indication for its employment, as follows:—1. Disturbance of the functions of the blood; (a) gas poisoning, (b) uraemia, (c) eclampsia, (d) gout, (e) chlorosis. 2. Disturbances of circulation; (a) local, (b) general. In gas poisoning, venesection is beneficial because the blood withdrawn by this procedure relieves the system of the carbonmonoxide-haemoglobin which is functionless, and later deleterious on account of its bad effect, especially upon the nervous system. Besides this the withdrawal of part of the blood causes a rapid formation of new blood cells, and serum which dilutes the remaining blood containing the gas in fixed combination with the hemoglobin. For this reason it is also indicated in other poisonings, arsenic, sewer gas, etc., because it meets the "indicato causalis." Considering Cohenheim's theory of uraemia, that the blood is overloaded with toxic substances, to be correct venesection is one of the best means to combat this condition. The author emphasizes the point that it should be employed early as a prophylactic measure. As soon as there is a suspicion of this condition, exhibited by headaches and

nausea, venesection followed by transfusion of normal saline solution with hypodermic injections of morphine should be given. The same holds true in chronic nephritis. In eclampsia it is only indicated when a delivery is not possible, on account of danger to the mother or child. In gout it is indicated to relieve acute joint symptoms, and also affords a method by the transfusion of alkaline solutions to increase the alkalinity of the blood. Dyes and his students have produced very favorable results by means of venesection in chlorosis. The effect in this disease is the stimulation to the new production of the blood cells by small and oft-repeated venesection—50 to 100 grams at a time. The author personally observed three cases treated in this way without either favorable or unfavorable results. In local disturbances of the circulation, apoplexy, cerebral arterio-sclerosis, hemorrhages from the lungs, or other organs, are given as indications for its employment. General disturbance of circulation, as pneumonia and other conditions causing dilatation of the right heart, and also all conditions causing acute dilatation of the left heart indicate its immediate use. In these conditions, large amounts, over 300 grams of blood should be withdrawn.

TOXICOLOGY OF ATOXYL.—Blumenthal and Jacoby (*Ther. Monatsheft*, July, 1907).—The authors attempted to determine in which organs of rabbits the effects of toxic doses took place. They were able at the time of death of the animal or shortly before to demonstrate arsenic in large quantities in the blood and bones of the animal. On the other hand they have never found arsenic in the other organs, excepting a very small quantity in the liver, and only once in the brain. They concluded that poisoning from atoxyl does not consist in a combination of arsenic with tissue cells, but that it occurs in the blood. Clinical as well as pathologic-anatomical symptoms, such as hemorrhages in all organs, have led them to the conclusion that a purely arsenical effect is produced. Some clinicians have thought of a probable anilin poisoning, but the absence of the "ocker yellow" color of the blood which is so characteristic in anilin poisoning makes this theory improbable. Blumenthal's experiments on dogs proved that symptoms of anilin poisoning were absent; thus confirming these findings. Atoxyl should be preferred to the arsenous acid, because arsenic in "statu nascendi" is split up in the animal body. Arsenic in the form of atoxyl is bound in the benzene ring. Atoxyl is an amido-phenylo-arsenate of sodium. The rapidity of the splitting off within the organism it has been thought to be slower than other arsenic. It seems, however, that this view is not true, because the authors were able to demonstrate the presence of arsenic in the bladder of rabbits one hour after administration. On the contrary the excretion after one single injection of 0.4 g. lasted six days in the rabbit. Atoxyl does not act directly upon bacteria, but acts either through splitting off of arsenous acid or through stimulation of those faculties of the organism which brings about a destruction of bacteria.

CASES OF VERONAL POISONING.—Zornlaib (*Win. Med. Woch. Ref. Ther. Monatsheft*, July, 1907).—A man 54 years of age took a quantity of veronal, estimated by author from 8 to 10 g. with suicidal intent. After 2½ hours patient was found unconscious. Face was cyanotic, corneal re-

flexes were absent, pupils half contracted and hardly responded to light. Breathing superficial and frequent, pulse 84 but strong. Notwithstanding a thorough washing of stomach, injection of camphor, vinegar enema and inhalations of oxygen, an exitus letalis followed 24 hours after having taken the poison. Two other cases were a pair of lovers who took 6 g. veronal each with suicidal intent. The girl died after 3 days without ever regaining consciousness; the man recuperated, probably due to vomiting which occurred soon after taking the poison.

SURGERY.

IN CHARGE OF

MALVERN B. CLOPTON, M. D.

OPERATIONS FOR NON-MALIGNANT DISEASE OF THE STOMACH.—Moynihan (*Surg. Gyn. and Obstet.*, June, 1907).—The first class of cases discussed is the perforating ulcers. Of these there were twenty-seven, ten duodenal and seventeen gastric, with eighteen recoveries. One must not wait for quickened pulse rate and rigid abdomen before operating. The first symptom is sudden agonizing pain, which almost reaches the limit of human endurance, and as a rule there is neither shock nor collapse. Exquisite tenderness of the skin is nearly always found. A diagnosis can be made from the history of ulcer, sudden intolerable pain, restriction of thoracic movements, surface tenderness, abdominal rigidity or restriction of the normally free abdominal movements. Early operation is indicated in all cases; the ulcer should be closed and infolded; excision is not necessary. Gastroenterostomy is advised when the ulcer is near the pylorus and might cause obstruction, or where a second ulcer is present. Drainage is necessary only in the late cases and if used should be suprapubic and in the Fowler position.

The second group is the hemorrhagic cases which are divided into acute ulcer and chronic ulcer cases. He has operated on thirty-three cases with the loss of six. Acute ulcers, when they bleed, are characterized by an abruptness of onset, rapid loss of a large amount of blood, and marked tendency to spontaneous cessation, and an infrequency of any but a trivial repetition. They never require operation. Chronic ulcer hemorrhages may be divided into four classes: I. Hemorrhage, latent or concealed—trivial and inconspicuous. II. Intermittent, moderate quantity, occurring spontaneously or capriciously, no jeopardy of patient's life from loss of blood, but persistent anemia. III. Hemorrhage usually following a warning exacerbation of chronic symptoms is rapidly repeated and abundant. Its persistence and excess are perilous and if unchecked will cause death. IV. Hemorrhage instant, overwhelming, lethal. The group III is the only class demanding operation. Gastroenterostomy alone is a satisfactory operation, but more recently the ulcer has been infolded by two rows of tight sutures about the base which include all the vessels interior.

The third group treats of chronic gastric and duodenal ulcers, and Moynihan's opinion is very emphatically in favor of posterior gastroenterostomy for all cases of simple ulcer, whether single or multiple, in-

volving the pyloric region of the stomach or duodenum, although if active he thinks the ulcer should be infolded or excised, and if extensive multiple ulcers involve a large part of the pyloric region, he believes in Rodman's excision of the ulcer-bearing area. In the diagnosis he believes we can be fairly accurate in locating the ulcer, particularly so if it is duodenal; he believes a diagnosis of the ulcer can be made and its location determined from the history without examining the patient. Repeated stasis of the food for longer than twelve hours means organic disease. He places a high value but no certain reliance on gastric chemical analysis. He does the posterior no-loop operation and he believes the only point to be settled in the technique is the direction of the gastric incision. He recommended formerly that this opening should be from above downward and to the right; later Mayo recommended from above downward to the left, but his experience with this direction has been very unfortunate. He now believes that the direction should be in the direction the duodenum takes as first observed when the colon is raised. This may vary through wide limits. There were two hundred and six cases of gastric or duodenal ulcer operated upon, with two deaths; gastric ulcer alone in one hundred and thirty-eight cases, duodenal ulcer alone in forty cases, and both combined in twenty-eight cases. Gastric ulcer occurred twice as often in women as in men and duodenal ulcer three times as frequent in men. In all these cases after operation there were four cases which were no better. Two of these are "neurotic." In this series he observed fourteen cases of gastric tetany of varying degrees, all with a high degree of pyloric stenosis, dilatation of the stomach with hypertrophy of the wall and obvious peristalsis and a prolonged stasis of food. Gastroenterostomy relieved all of them; two of them had slight attacks and one a severe attack immediately after operation. The fourth group is of hour-glass stomach. It is not infrequently associated with cicatricial pyloric stenosis. The cardiac pouch is usually larger than the pyloric and gastroenterostomy of the cardiac pouch will relieve the condition. There were twenty-four cases operated upon, with four deaths. Gastropasty was performed seven times, gastrojejunostomy alone seven times, gastrojejunostomy and gastrogastrostomy three times.

GASTRIC AND DUODENAL ULCERS.—Mayo (*Annals of Surg.*, June, 1907).—Nearly all the failures of ulcer surgery are to be found in the so-called clinical or medical or non-indurating ulcers; because (a) the ulcer is not located and many times its existence is problematical; (b) the condition is often confused with pyloric spasm, atonic dilatation, gastrop-tosis and gastric neuroses, or other morbid non-surgical conditions; (c) the ulcer does not give rise to mechanical interference with the progress of food, which would introduce an operative indication.

The location of the indurated ulcer is usually stated as ten gastric to one duodenal, while the author in two hundred cases has found eighty-seven gastric, ninety-eight duodenal and fifteen independent of either viscus. This discrepancy is explained by the fact that the pylorus is usually incorrectly located (the pyloric vein runs upward on the gastric side of the pylorus for three-fourths of its extent) and since gastric ulcers rarely involve the last three-quarters inch of the pyloric end of the stomach—and duodenal ulcers are most frequently found very close to the pylorus—

the mistake is made of calling what seems to be a pyloric ulcer a gastric ulcer. In sixty-nine cases of resected cancers of the stomach, 54 per cent gave a clinical history or a pathologic picture of having developed on the base of an old ulcer.

Chronic non-indurating mucous ulcer is discussed at length with its indefinite symptomatology, which might be equally characteristic of other non-surgical conditions. Pyloric spasm is the most misleading symptom, and it does not indicate ulcer alone, as it may accompany gall-stones, appendicitis or tuberculosis of the cecum. Operations based on the belief or actual existence of non-indurating mucous ulcers have as a class been unsatisfactory, not because of a high mortality, but because in a large majority of cases there has been no relief, or a new element of discomfort has been introduced. Operation in a mucous or undemonstrated ulcer is not indicated unless there exist complications, such as perforation, hemorrhage or obstruction.

BENIGN LESIONS OF THE STOMACH—Monroe (*Ann. of Surg.*, June, 1907).—There were one hundred and fifty cases followed from the operation to the present time, eighty-seven showing gross ulcers, sixteen medical or non-indurating ulcers, twenty-five cases of adhesions to the viscus and fifteen so-called neuroses, while nine were variously classified as ptosis, pyloric spasm, etc. Congenital pyloric obstruction and perforating chronic ulcer must evidently demand surgical intervention. There may be a question in other conditions. The reason for partial success in gross ulcers may be ascribed to the fact that undue prominence may be given by the patient, who for years has been watching her digestive apparatus, to eructation of gas or occasional vomiting, or there may be a weakened neurotic strain, or some intercurrent disease. Late sudden bleeding in two cases that had been cured for a year after gastroenterostomy, give strong reasons for excising extensive ulcers, also to prevent malignant degeneration. In the sixteen medical ulcers, even if there was ptosis or an evidence of the stomach not draining itself, the relief was never more than incomplete and in this class of cases the abdomen is now closed without operating on the stomach. A diagnosis between medical non-indurating and gross indurating ulcers cannot be made without opening the abdomen. Adhesions to the stomach from the gall bladder or other regions, when broken up, give relief in the majority of cases. The worst class of cases to deal with are the neurotics, which were for the most part made worse by operation, and the practice is not to interfere with these cases. The operations used were the long and then the short loop of Moynihan, which was abandoned for the gastroenterostomy and enteroenterostomy, both with fair success. Roux's operation in Y was next used with almost complete success, but the technique was too complicated. It was tried on some of the worst neurotics to prevent regurgitation of bile, nevertheless almost constant regurgitation followed. Now the no-loop posterior gastroenterostomy with the transverse slit in the stomach is the one employed. Finney's operation was used, and although the slower to come, the end results were good. After reopening a number of abdomens with varying intervals after anastomosis, they failed to find any indication of closure of the opening which was made with suture, but in two cases where Murphy's button had been used, the gastroenterostomy had closed so that it had to be remade with clamp and suture.

PYLORECTOMY FOR BENIGN STENOSIS.—Biechot (*Revue de Chir.*, Jan., Feb., March, 1907).—In an extensive article pylorectomy is recommended as the correct surgical procedure for benign stenosis of the pylorus, such as usually is caused by an ulcer. Gastroenterostomy is considered illogical on physiologic grounds because the duodenum is shown to be essential to the proper performance of digestion. It controls the movements of the stomach and its emptying through the pylorus; the passage of the chyme through the duodenum is necessary to the proper functioning of the biliary and pancreatic apparatus. In ulcer there is always danger of cancer developing later, or a perforation or a hemorrhage, which are not prevented by gastroenterostomy. The complications following gastroenterostomy, such as vicious circle, or volvulus of the intestine or the development of peptic ulcer, are great drawbacks to the operation. On the other hand, pylorectomy overcomes all these objections, removes the offending ulcer, leaves a physiologic canal and gives an immediate and ultimate cure. He quotes statistics to show that the mortality of gastroenterostomy is about 5 per cent, and that in pylorectomy the percentage is about the same. But even though the immediate mortality from pylorectomy is greater, the fact that the cure is complete, makes the balance fall in its favor as opposed to a less mortality from gastroenterostomy, with its subsequent greater risk. Quite a number of cases are appended which show the results of such operations.

ORTHOPEDIC SURGERY.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

BIER SUCTION TREATMENT OF TUBERCULAR SINUSES.—Sever (*Boston Med. and Surg. Jour.*, June 6, 1907).—Sever advocates the routine use of Bier suction treatment, combined with compression, in every case where a sinus exists, provided such treatment is applicable to the sinus opening. Of the 16 cases he reports, 8 were either wholly cured or showed very marked improvement. In 5 the local condition showed no change, but the general condition improved to a noticeable degree, the patient gaining weight and showing increased haemoglobin. Three patients got worse under the treatment. The cases treated were cases of Pott's disease, tumor albus, hip disease and osteomyelitis.

TRANSPORTATION OF THE SARTORIUS MUSCLE AS A MEANS OF FIXATION IN EXCISION OF THE KNEE.—Kofmann (*Zentralbl. f. Chir.*, 1907, XXXIV, 417).—For the bad result that often follows excision of the knee, evidenced by posterior flexion, the author cites the fact that none of the many methods of excision which have been devised have overcome this difficulty. The transference of the flexors of the knee to the anterior surface, he has tried, without success. In his next case, he made a median incision, through which he exposed and prepared the sartorius from the middle of the thigh to its insertion into the tibia. He

then opened the joint by a transverse incision, from the end of the first incision over the tuberosity of the tibia to the lateral ligament. The ankylosed joint was excised, and the sartorius was sutured directly over the joint into the belly of the rectus muscle. This allowed the lifting of the limb by the heel without displacing the bones in a backward direction. The wound was closed, and after fifteen days all dressings were removed.

THE TREATMENT OF JOINT ANKYLOSIS BY THE TRANSPLANTATION OF PLATES OF CARTILAGE.—Wegłowski (*Zentralbl. f. Chir.*, 1907, XXXIV, 481).—The case reported by Wegłowski is of unusual interest, as he was able to note the exact conditions resulting from the interposition of cartilage between the ends of bones, where a joint had become ankylosed. The joint in question was an elbow, upon which he had operated unsuccessfully to restore motion, the surfaces of this joint adhering in spite of systematized exercises and manipulation. Appreciating former attempts to relieve ankylosis by the placing of fasciae and muscle between the joint surfaces, he decided to try cartilage. The patient was again operated upon, the elbow opened, the lower end of the humerus and the upper end of the ulna removed by a Gigli saw, and the head of the radius shelled out. Two plates of cartilage were then removed from the cartilages of the sixth and seventh ribs, along with the perichondrium, to about half the thickness of the cartilage. These two pieces were then placed between the bones with the perichondrium towards the epiphysis of the humerus. They were not sutured in place. The wound was closed and a plaster applied. Healing took place at the end of ten days, and active and passive movements were begun. After four weeks, 60 to 70 degrees of flexion and extension could be easily performed, with normal pronation and supination. Five weeks after operation, the patient died of pneumonia. An examination of the joint showed the cartilage firmly fixed to the humerus, smooth, even and glistening; and microscopic examination showed new blood vessels and normal growth between the bone and the transplanted cartilage.

CLINICAL REMARKS ON THE TREATMENT OF SURGICAL TUBERCULOSIS.—Steward (*Brit. Med. Jour.*, April 3, 1907).—It is doubtful whether the general body of the profession realize the marked improvement which has been made in the treatment of surgical tuberculosis during the last decade. The principles of treatment that apply to a case of pure tuberculous disease are very different from those suitable to a case of mixed infection, and the prognosis of the case is profoundly affected in an adverse direction when once a secondary pyogenic infection has been added to a tuberculous lesion. Tuberculosis of the bone or joint is curable in the great majority of cases; but once sinuses have formed and the bone or joint has become infected secondarily, the case is rapidly drifting into the incurable class, with the prospect of the eventual onset of amyloid disease. It is clearly, therefore, of the highest importance to be careful in these cases, lest operative measures should lead to a mixed infection, and thus contribute to the production of a condition far more serious than that for which they were undertaken. The author calls

attention to the following points in the treatment of tuberculous collections generally, which will minimize the chance of sinus formation. The general condition should be improved as much as possible before operation by complete rest in bed in the open air, and plenty of good food. Incisions should be made where the structures overlying the abscess are thick, so that their subsequent suture will leave a considerable mass of tissue between the skin and the abscess-sac, for if the incision passes through the skin thinned out and adherent to the abscess, the sutures will pass directly through the skin and the abscess-cavity, and thus form lines, along which direct infection will be liable to occur. In the case of a psoas abscess, for instance, it is preferable to make the incision above Poupart's ligament. When the sac of the abscess is reached, it is well to draw the superficial structures to one side before opening the abscess, so that, should the abscess refill and the scar in the sac stretch, the parts immediately over it do not become thinned and liable to give way. The use of the finger to explore the cavity should be strictly avoided. Curetting should be carried on with as much gentleness as is consistent with complete removal of the lining sac. The application of strong antiseptics to the sac-wall is of doubtful utility. Closure of the wound should be complete and thorough and attained by the introduction of several rows of interrupted sutures. Catgut is recommended for suture material. A drainage-tube should on no account be used, and the subsequent dressings should be carried out with the greatest of care to prevent contamination. The parts should then be kept at rest for a prolonged period. Aspiration of a tuberculous collection is both inefficient and risky, in that the fluid contents only can be withdrawn, and that the needle track is liable to become the seat of tuberculous disease. The author dwells upon the great value of prolonging the treatment by conservative methods, as opposed to early operation, and is convinced that better final results are thus attained. For some time he has been giving tuberculin in all cases of tuberculous disease of the bones and joints, and is of the impression that in the majority of cases the effect has been beneficial.

AN ANATOMICOPATHOLOGICAL STUDY OF DISLOCATIONS OF THE SEMILUNAR CARTILAGES OF THE KNEE.—Dambrin (*Rev. de Chir.*, 1907, XXVII, 616).—Operation is necessary where dislocations are recurrent, and where manipulation will not reduce the dislocation. The operation, with care, should be both safe and effective. Arthrotomy, with fixation of the cartilage, extirpation of the cartilage, called respectively meniscopexy, or meniscectomy; in either case the incision is a vertical one, two inches long, about midway between the patella and the internal lateral ligament. The cartilage may be sewed to the periosteum of the tibia, or it may be removed. Dambrin is of the opinion that there is no difference between the operations, but extirpation is slightly safer than fixation. In 87 cases, 4 had mild infection, where the operation was excision, while in 35 cases of fixation, 5 had joint infection. This difference is due to the prolongation of manipulation in suturing and fix-

ing the cartilage, as well as to the foreign bodies introduced. In 53 of the 87 extirpations, absolute cure was obtained. He believes that extirpation of the cartilage is perhaps the better operation, and also that Lenail is wrong in supposing that the meniscus will regenerate after its removal.

INTRA-ARTICULAR INJECTIONS AT THE HIP. THEIR TECHNIQUE AND USE IN THE TREATMENT OF HIP DISEASE—Calot (*Jour. de Med.*, May, 1907).—The inaccessibility of the hip articulation to approach with an injecting needle is outlined, and the dangers attendant on such a procedure are fully described. After many experiments on the cadaver, and considerable practical experience, the author concludes that the point of election for making an injection into the hip-joint lies below the crural arch, outside the course of the femoral vessels. Here the head of the femur can be palpated. The rule is as follows: In a child, eight to fourteen years, the skin is pierced 2 cm. or $2\frac{1}{2}$ cm., below a horizontal line passing between the pubic spines and 2 cm. or $2\frac{1}{2}$ cm. outside the femoral artery, which can be felt pulsating. In an adult, 3 cm. Perhaps a better direction, applicable to all cases, is to pierce the skin half way up a vertical line, passing from the anterior superior spine of the ilium to course of the femoral vessels. The needle must not be pushed in directly from before backwards, but must be inclined upward, and from without inward to an angle of about fifteen degrees. This allows the injection to enter the capsule of the joint under the femoral head. The needle must have a short bevel, similar to the type used for spinal cocainization. It must be forced to a point where the bone is felt. Then the handle is forced transversely and downward, keeping the point in contact with the bone. The injection is put in with force, that the liquid may penetrate to the lower depths of the acetabulum. The needle is then withdrawn and a tampon is held very firmly over the orifice for two to three minutes, to prevent the liquid from escaping, and to favor the transmission of the fluid to all the recesses of the joint cavity. This is followed by a sterile compression bandage. The necessity of doing something more definite to prevent tuberculous disease from progressing is well established. All surgeons familiar with hip-disease know that the great majority of cases have a shortening of three cm., more or less complicated by vicious position and an ankylosis more or less solid. Of course some cases make good recovery, and ultimately have no lameness; but in three-fourths of the cases there is shortening of three cm. and decided lameness. Furthermore, those cases that have abscess are usually under treatment over two years, and have more marked destruction and worst end results. The author claims remarkable results both in checking beginning disease and helping old bone destructions to quiet down without further progress, by the method of treatment he recommends. It is applicable to all joint tuberculosis, the knee, the elbow, the shoulder, the ankle or the hip, and should be put into use whether the disease is well established or just beginning; in fact, as soon as a positive diagnosis is made. The fluid used is of two kinds.

In acutely active and rather light forms of disease, the injection is made of the following ingredients:

Huile	50 gms.
Ether	25 gms.
Cresote	3 gms.
Iodoform	7 gms.

At each sitting, 3 to 10 gms., according to age, of this solution are injected through a No. 2 Collin needle, 8 cm. long, with a short bevel. In fungus forms of disease, the same quantity of the following is used:

Glycerine	20 gms.
Naphtol Camphre.....	3 gms.

This treatment should be put into effect every five or six days for two months, then the case should be allowed to rest for six months, meanwhile keeping up the ordinary orthopedic measures. The author concludes that treatment, such as repose, extension, immobilization, correction of faulty attitude, etc., results in the majority of cases in a shortening of 3 cm. and a permanent limp. This shortening is due to an erosion of the bone at the articulation by the tuberculous process. Mechanical treatment, no matter how well enforced, does not wholly prevent this erosion. The only method of improving the present orthopedic treatment is to inject into the diseased joint area such substances as will tend to lessen the activity of the growth of the disease process.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON, M. D.

A CASE OF ACUTE METASTATIC GONORRHEAL MYOSITIS; WITH REMARKS ON THE DIAGNOSIS AND TREATMENT OF THIS AFFECTION.—Cumston (*Amer. Jour. of Urol.*, July, 1907).—This rather interesting and unusual complication came on with the subsidence of an acute attack of gonorrhea. The patient complained of a feeling of malaise, temperature rose to 39.5 deg. C., accompanied by sharp pain in the biceps of the right arm. The muscle was somewhat tumefied, and excruciatingly tender on pressure. The skin was normal in color, and the local temperature apparently not increased. No inflammatory process of the joints was present. Mercurial inunctions were given once daily, and the limb enveloped in towels wrung out in hot water, covered by rubber dam, and internally ol. gaul-

theria, gtts. X. three times a day. The patient slowly recovered, and in about two months had regained the use of his arm almost completely, though it was still somewhat tender. Three months later, when the patient was seen again, recovery was complete.

Metastatic muscular complications of gonorrhea appear to be relatively benign, while in the case of other metastatic myositides, suppuration is very prone to occur, while in milder cases, various forms of muscular degeneration, or atrophy, appear to be the final outcome. In some rare cases, the general symptoms assume such seriousness that death of the patient may result.

In the diagnosis, there are many morbid manifestations, which may deceive the clinician. The presence of a fresh urethral infection will aid in differentiating from muscular rheumatism. In the muscular pains of secondary syphilis, the history and the cutaneous or mucous manifestations, or the action of a well directed specific treatment, will settle the diagnosis. In myositis of the recti abdominalis, with a maximum point of pain over the appendix, accompanied by hardness of the muscle, the condition might lead one to favor a diagnosis of appendicitis. An adenitis might be mistaken for a focus of myositis, but the enlarged glands will always be present in their ordinary anatomical situation, and will never be found in a muscle. Arthritis and peri arthritis are always accompanied by an enlargement of the joint; movements are impossible, at least temporarily so, while in myositis motion is hindered and even painful, but is always possible. Ankylosis and atrophy are probably never met with in myositis of a gonorrheal type, while in this type of arthritis they are not infrequent. In the gonorrheal form of myositis, there is never any superficial edema, or the hard painful cord so characteristic of phlebitis. Limitation of the pain to a well defined course, generally quite long, will prevent one from mistaking myositis for a neuritis, which is also made evident by special symptoms, such as tingling and trophic disturbances. Myositis of the deep muscles may be mistaken for an acute osteomyelitis, but in the latter affection one will find a more or less deep-seated, painful swelling and a certain number of symptoms of a general character, whose gravity far exceeds anything met with in gonorrheal myositis.

In the treatment, the salicylates appear to have no action, nor do the other drugs ordinarily used in rheumatic conditions, with the exception of oil of gaultheria, which appears to have some soothing, although not curative effect. Tincture of iodine appears to give some relief in certain cases. Rest, with damp heat in conjunction with inunctions of mercurial ointment, will shorten the course of the affection more quickly than any other means we have at our disposal, and this line of treatment was certainly as efficacious as could be expected, in the case here reported.

THE OCCASIONAL FALLACIOUSNESS OF THE DIAGNOSIS OF ENLARGED PROSTATE MADE FROM DIGITAL EXAMINATION THROUGH THE RECTUM.—MacGowan (*Amer. Jour. of Urol.*, July, 1907).—The writer reports three cases to illustrate how a mistaken diagnosis may be made from palpation of the prostate. In the first case, a marked bilateral, smooth enlargement of the prostate was noted. After catheterization, a bimanual examination

disclosed a tumor in the position of the prostate. The cystoscope showed a marked protrusion of the prostate into the bladder, but no distinct nodules projecting into the field. At operation, an abscess and a large number of phosphatic calculi were found in the prostate. In the second case, on palpation, the prostate appeared very large and nodular; the middle and upper portions seemingly projected into the bladder. Upon bimanual examination, the bladder wall was thick. This, however, was attributed to a pericystitis. At operation, the whole superior wall of the bladder was occupied by a thick and heavy epithelioma, which filled the bladder space, rested upon the trigone and felt then, as before operation, to the examining finger in the rectum, like a growth in the prostate, though the region of the trigone was not actively involved in the cancerous process, and the prostate was healthy.

In the third case, the prostate felt, through the rectum, enlarged but not clearly outlined, giving rise to suspicion of cancer of the bladder base. The image of the bladder neck was very imperfect, and many irregular projections could be observed about it. No definite image of the trigone could be observed, and neither uterer could be seen. No satisfactory view of the superior bladder-wall could be obtained. At operation, an hour-glass contraction of the bladder was discovered, the ureters running diagonally across the lower wall of the septum, ending in a trigone which had gradually hypertrophied until it sagged into the vesical outlet, producing total retention and simulating, to the finger in the rectum, prostatic enlargement to such a degree that, in the presence of the other symptoms, deception was easy.

FIBROUS ENLARGEMENT OF THE PROSTATE.—Martin (*Therapeutic Gazette*, July, 1907).—Under this heading the author speaks of the cases, in which, with the fibrous enlargement, a ring-like induration due either to hypertrophy or to fibrous degeneration of the musculature, occupies the position of the internal vesical sphincter interfering with micturition. He quotes Pardue (*Clin. Jour.*, April 17, 1907) as recommending, in these cases, prostatectomy, and of obtaining excellent results by splitting the constricting ring toward the rectum to a degree that will permit the index finger to easily enter the vesical orifice. The same end may be attained by introducing a dilating instrument of sufficient caliber to be stretched up to 80 or 90 of the French scale, thus overcoming the resistance of the internal vesical sphincter. Stretching up to 40 or 50 is practically unavailing, nor is it safe to apply even this degree of distention to the compressor urethræ muscle.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OFHUGO EHRENFEST, M. D.

THE USE OF SUPRARENIN IN OBSTETRIC PRACTICE—Max Neu (*Gynaek. Rundschau*, No. 12, 1907).—In his introductory remarks, while speaking of the pharmacodynamic action of extracts of the suprarenal glands, the writer mentions the very interesting fact, that quite recently Stolz in the "Hoechst Farbwerke" has succeeded in producing synthetically the active principle of this extract.

The effect of suprarenal extracts upon the uterine musculature of late has been carefully studied by Kurdinowski and Kehrer. They both confirmed the older observation that under the influence of this substance the pregnant uterus contracts firmly. Kurdinowski believes, however, that this apparent contraction of the organ is only coincident to the resulting contraction of the uterine blood vessels, and thus denies any specific effect of suprarenal extract upon the uterine musculature. Such a specific action, on the other hand, has apparently been proven by Kehrer. From certain experiments and observations the author of this paper felt justified in accepting Kehrer's views.

An abdominal Caesarian section offered him the welcome opportunity to study the question on the human being. After the pregnant uterus had been developed through the abdominal incision, one hypodermic syringe-ful of a one to ten thousand solution of suprarenin was injected into the uterine musculature in three different places. The uterus immediately contracted firmly, becoming paler in color. The organ could be extirpated practically without the loss of blood. The writer states emphatically that the contracting effect of the intramuscular application of the suprarenal extract in this case was very pronounced and most gratifying.

METRRORRHAGIA SYPHILITICA.—Muratow (*Zentralbl. f. Gyn.*, No. 27, 1907).—The writer points to the striking fact that gynecologic literature contains so few references to a certain form of uterine hemorrhage which cannot be explained except by a syphilitic infection of the uterus. He cites an instructive history in which also the prompt relief following the use of iodides and mercury tends to prove the assumption that the hemorrhage in this case was due to syphilis. It is probable that uterine ulcerations, necrotic gummas, etc., may cause the metrorrhagia, but in analogy to similar hemorrhages from the stomach observed in syphilitic patients, it is probable that the uterine hemorrhage also results from destructive processes in the vessel walls. The writer emphasizes the necessity of a careful search for syphilis, if necessary with the aid of a specialist, in all cases of severe metrorrhagia which do not respond to the customary therapeutic measures. He mentions especially a symptom which of late has been repeatedly described by French writers, consisting in a pain running along the arteries of the pelvic cavity.

THE ADMINISTRATION OF OVARIAN SUBSTANCE IN AN EFFORT TO DETERMINE THE SEX OF THE FETUS—Peham (*Monatschr. f. Geb. u. Gyn.*,

Bd., XXV. H. 4).—The idea underlying this series of experiments made on rabbits is the following: The administration of ovarian substance could possibly influence the sexual vigor of the animal and in this way secondarily exert some influence upon the sex of the developing fetus. The results were entirely negative. Noteworthy seems the fact that comparatively large doses of a homogeneous extract were used obtained from the same species of animals.

THE CONDITION OF THE UTERINE DECIDUA IN ECTOPIC PREGNANCY—W. H. Schultze (*Arch. f. Gyn.*, Bd. 81, H. 2).—The still unsettled question concerning the origin of the lower uterine segment has during the past year been discussed in various important contributions, some of which have been reviewed in this department. Most acceptable seems the explanation offered by Aschoff. According to his investigations the typical uterine mucosa does not end at the internal os but extends downward into the cervical canal. At the site of junction of the uterine to the typical cervical mucosa the lower uterine segment ends which extends upward to the anatomic internal os. It has been the claim of many writers that the lower uterine segment cannot be a part of the cervix and must be a part of the uterine body, because the lower uterine segment always shows a decidua, while according to generally accepted ideas the cervical mucosa does not change into a decidua.

Schultze describes in this article conditions found in a uterus of a case of tubal pregnancy. A typical decidua extended down to the middle of the cervical canal, where the typical cervical mucosa began. This observation clearly supports the contention of Aschoff that the cervical mucosa consists of two sections and in this way throws interesting light upon his theory of the origin of the lower uterine segment.

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

CONCERNING PYLOROSPASM—Wemstedt (*Jahrbuch f. Kinderheilk*, June, 1907), as the result of his anatomical studies, says that while the condition is probably congenital, indisputable proof of its congenital nature has as yet *not* been furnished. The author believes, however, that there is at *birth* neither a spasm nor a true hypertrophy, but rather a predisposition for the occurrence of a spasm with secondary muscular hypertrophy. According to his views there can be no question of the functional nature of the disease from either the clinical or pathologic-anatomic viewpoint. The postulated predisposition to spasm is to be explained by imperfect development of function of the nervous mechanism regulating the gastric motility. The increased and partly entirely new demands made on the stomach directly after birth might be the cause of the disturbance of function of the nervous mechanism.

THE RELATION OF DIPHTHERITIC RELAPSES AND MEASLES.—Barbier (*Le Progres Med.*, June 22, 1907), calls attention to the fact, supported by a series of personal observations, that a relapse in diphtheria or a lighting up of a latent diphtheria is particularly frequent if one of the eruptive fevers supervene shortly after the original attack or exposure. Measles seems to exercise a particular influence in this connection, especially if it come on shortly after exposure to diphtheria (even though preventive injections of serum have been given), or if it come on very soon after recovery from an attack of diphtheria. Accordingly the author advises that if measles occur in a diphtheria convalescent within two months of the attack, a further injection of antitoxin should be given at once. If measles break out in a family or an institution where members had been previously exposed to diphtheria, immediate prophylactic doses of antitoxin should again be given, even though they had been used within three weeks (the ordinary period of protection of prophylactic doses).

DIAGNOSIS OF ENLARGED BRONCHIAL GLANDS—Boujarel (*These de Paris*, 1907; *Rev. Mens. des Mal. de l'Enf.*) says that one of the first signs of this condition may be a distinct expiratory stridor making its appearance from the third to the sixth month. This expiratory stridor is due to compression of the enlarged glands and the resulting narrowing of the calibre of the respiratory passages. The stridor is distinguished from congenital laryngeal stridor by its late appearance, its expiratory character and its progressive increase in intensity coincident with the growth of the bronchial glands. In addition to the ordinary methods of physical examination for the detection of these enlarged glands, the author finds the x ray the most valuable diagnostic aid. The enlarged glands throw distinct shadows, the dimension corresponding with the size of the glands. As a confirmatory sign the radioscopic examination is of great value in the diagnosis of this condition. Breton (*These de Paris*, 1906; *Arch. de Med. des Enf.*) finds that radioscopy does not give such good results in the diagnosis of enlarged bronchial glands. He thinks that Eustace Smith's sign (a bruit heard over the jugulum with the child's head in extreme extension) is of distinct value.

ERRORS OF DIAGNOSIS OF APPENDICITIS IN THE CHILD—Barillet (*These de Paris*, 1907; *Rev. Mens. des Mal. de l'Enf.*) says that in the majority of cases diagnosis of appendicitis in childhood can be made easily, because of the clearness of the picture presented here. But in many cases difficulties in diagnosis arise. Among the rarer causes of confusion are: Dermoid cyst with twisted pedicle, pneumococcus, peritonitis, inflammation of Meckel's diverticulum, and acute salpingitis; but inasmuch as surgical intervention is indicated in all of these conditions the error in diagnosis does not do so much harm. On the other hand, recurrent vomiting with acetonuria, tubercular peritonitis with its so-called crises, may all simulate appendicitis and cause serious error. So, too, gonococcic peritonitis may cause confusion. Many pulmonary lesions, in particular pneumonia, often begin with severe abdominal pain and others may give rise to grave error in the absence of very careful examination.

RADIOSCOPY IN THE DIAGNOSIS OF PNEUMONIA IN CHILDHOOD—Weill and Thevenot (*Arch. Med. des Enf.*, July, 1907), as the result of their experimental study of the subject reached the following conclusions: True pneumonia with fibrous exudate gives—nearly always—definite physical signs in the child; dullness, bronchial breathing and crepitant rales; and in all these cases a distinct shadow on the x ray plate. The parallelism between the physical signs from the radiological finding is practically constant. Pulmonary affections which give *no* shadow with the x ray and which clinically resemble pneumonia, should really be distinguished from this affection as they most often turn out to be either simple congestion or bronchopneumonia with scattered lesions. So-called central pneumonia the authors find to be *very rare*, almost exceptional. The term should be limited to cases which clinically show all the symptoms of pneumonia—*without physical signs*—but in which a shadow with the x ray is found which bears witness to the fact that there is really a fibrous exudate.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M. D.

HISTOLOGICAL OBSERVATIONS ON THE CHANGES IN THE NERVOUS SYSTEM IN TRYPANOSOME INFECTIONS, ESPECIALLY SLEEPING SICKNESS AND DOURINE, AND THEIR RELATION TO THE SYPHILITIC LESIONS OF THE NERVOUS SYSTEM.—F. W. Mott (*Archives of Neurology*, Vol. III).—This is a very important piece of research, especially from the point of view establishing the relation of these diseases to that of syphilis. The point that needs emphasis in this connection is, that since Schaudin's discovery of the *trypanosoma pallida* as a cause of syphilis, the study of all diseases caused by this form of parasite is of especial interest particularly if the nervous system shows changes. Sleeping sickness and dourine have been conclusively shown to be due to a trypanosome, therefore a comparison of the nervous system in these diseases and syphilitic brains ought to bring out some important facts. It is the purpose of this paper to point out the similarity in the tissue reaction of certain chronic trypanosome diseases to those of syphilis. The material upon which this study is based is very large, thirty human brains of subjects dying of sleeping sickness, and tissues of nine monkeys inoculated by various methods with blood and spinal fluid from sleeping sickness cases. Some of the observations noted in this extensive piece of research are the following: The disease is characterised by a chronic polyadenitis which is subsequently followed by a chronic inflammatory change in the lymphatics of the brain and spinal cord. The meningeal and perivascular infiltration of the central nervous system may be regarded as the result of a chronic irritative process connected with the presence of the trypanosomes in the cerebrospinal fluid. In marked cases of chronic sleeping sickness the appearance presented by the lymphatic glands resemble in many ways the infiltration of the perivascular lymphatics of the central nervous system.

All cases of sleeping sickness have trypanosomes in the cerebro-spinal fluid at some time or other, and it is probable that the entrance of the trypanosomes into this fluid marks the onset of and slowly causes the chronic inflammatory changes in the lymphatic system of the central nervous system. The alternative hypothesis assumes that the trypanosomes produce a toxin by multiplying in the lymphatic glands which is absorbed by the lymphatics. This toxin proceeds along the vessels and nerves to the lymphatics of the cerebro spinal axis.

THE SUPRARENAL GLANDS IN NERVOUS AND OTHER DISEASES.—F. W. Mott-Halliburton.—(*Archives of Neurology*, Vol. III).—This investigation is of some interest owing to the prominent place which the study of the ductless glands has come to occupy recently. The study was suggested by the frequency with which these glands were found to be atrophied or changed in the routine autopsies at the County Asylums, London. A number of glands were studied microscopically in the usual run of asylum cases. The interest in this paper is accentuated by the fact that not only were these glands subjected to the usual microscopic tests, but they were physiologically tested by Halliburton. The extract of the glands was injected into certain animals to test the blood pressure power of the glands studied. The following conclusions are noted as a result of this work: 1. Atrophy and degenerative changes in the suprarenal glands are frequent in the class of cases of nervous diseases, asylum cases which were especially investigated. 2. These changes appear, however, to be unrelated in any special way to the kind of disease for which the patients were admitted to the asylum. 3. They appear rather to be the consequence of the secondary disease which ultimately caused death. 4. The suprarenal glands, like other secreting glands, are adversely affected by any disease which impairs the general nutrition of the body. 5. The diseases which appear to be especially efficacious in producing this result are those of a chronic and wasting nature, but acute disease, if sufficiently intense, will often produce the same result.

FURTHER BACTERIOLOGICAL AND EXPERIMENTAL INVESTIGATIONS INTO THE PATHOLOGY OF GENERAL PARALYSIS AND TABES DORSALIS.—Robertson M'Rae (*Rev. Neurology and Psychiatry*, June, 1907).—This is a further report on the investigations of these two authors on the new conception of dementia paralytica which may be briefly stated as follows: They have contended that a diptheriod bacillus having cultural and morphological characters resembling those of the Klebs-Loeffler bacillus plays the chief part in the production of the toxemia of general paralysis. They have at the same time insisted upon the importance of weakening of the local and general defenses against bacteria and have attributed the chief part in the production of this impairment to syphilis, chronic alcoholic intoxication and the excessive use of nitrogenous foods. The authors refer in this paper to a continuation of their studies in the cultural and morphological aspects of the bacillus which they contend has been isolated. This bacillus, as is now known, has been termed the bacillus paralyticans. As a part of their experimental data they have attempted to produce in rats by injection of the organisms general paresis or what would correspond to this disease in man. An examination

of the tissues after death in these animals has shown lesions that were very similar to those found in certain cases in man resembling them more than was at first thought possible. All the animals experimented upon died after showing parietic symptoms, and their cerebral tissues show periarthritis, neurologia proliferation and severe nerve cell lesions. Sixty animals were fed from strains of bacteria isolated from cases of general paralysis and tabes dorsalis. Animals from this series showed to a striking degree the symptoms which might be readily interpreted as being those of paresis as it would show itself in animals. A further development of their studies has naturally led to the effort to produce a serum which might be used in a curative way. In this connection they mention a case of early tabes. The patient's urine was found to be loaded with two organisms, diptheroid bacillus of the type described as the bacillus paralyticans brevis and a diplococcus resembling the gonococcus but gram fast. For a time this patient was treated by the vaccine method, injecting definite doses of killed cultures of the bacillus isolated from his urine. A sheep having been immunized by the same bacillus in such a way as to produce a bacteriacidal serum the patient was treated by the serum for some weeks. Further improvement was noted. It is also of interest to note that the bacilli in the urine disappeared. The paper which is here only very briefly abstracted contains much that is of interest and it shows that a progressive piece of investigation, such as this is, will ultimately bring to light important data even if the original thesis is not always in the foreground.

THE SYMPTOMS DUE TO PERIPHERAL NEURITIS OR SPINAL LESIONS IN DIABETES MELLITUS.—Williamson. (*Review Neurology and Psychiatry*, July, 1907).—There are several clinical forms of these affections. 1. The patient complains of pain in the legs, the muscles of the legs are tender on pressure. There may be no other signs or symptoms on examination of the nervous system. 2. Cramps occur frequently in the legs, there is pain in the calf muscles, the tendo-achillis and the knee jerk are present and there is very slight sensory disturbances. 3. The pain is more prominent, hyperæsthesia, tenderness in the toes, numbness and tingling in the skin, in some cases the tenderness becomes so severe that the weight of the bed clothes can not be borne. The tendo-achillis reflex is lost, but the knee jerk commonly remains. There is some sweating and hyperæmia in the feet and the tenderness in the soles may be so great that the patient is unable to walk. 4. In another group of cases the pain in the legs is slight but the tendo-achillis reflex is lost, while the others show an absence of both. 5. In the forms just mentioned there is no paralysis or paresis, but in rare groups of cases there are paralytic symptoms in the legs like those of alcoholic neuritis. 6. A few cases have been recorded in which there has been unsteadiness in walking along, with weakness in the legs. 7. In rare cases there are perforating ulcers in the legs like those in tabes with pains in the legs and loss of knee jerk and tendo-achillis reflex. 8. Nervous symptoms are occasionally present in other parts of the body. The pathology underlying these conditions must be considered to be dependant upon changes either in the nerves themselves or in the spinal

cord, or perhaps in the muscles themselves. The author of this paper has found changes in the cord itself that suggest the changes found in tabes.

It is probable that the absence of reflexes in the leg depend upon spinal cord changes. In the minor symptoms examination of the peripheral nerves showed no special alterations.

OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

NOTES ON A SERIES OF CASES ILLUSTRATING THE LATE RESULTS OF BIRTH INJURY TO THE VISUAL ORGANS.—Thomson and Buchanan (*The Ophthalmoscope*, August, 1907).—*Case 1.* A boy of nine had a high grade of astigmatism in one eye only. The mother stated that the eye had been bruised at birth and showed the scar of a wound in the upper eyelid which had been inflicted by the blade of the forceps. Examination of the cornea showed two almost vertical bands of faint opacity on its posterior surface. Ophthalmometric examination corroborated the finding of over 6 D. of astigmatism and proved that the curvature of the cornea was high.

Case 2. A child of six months showed a single nearly vertical band of opacity on the posterior surface of the cornea. The mother stated that the eye had been injured by forceps at birth and said that the eyelids had been swollen and black for some days after birth.

Case 3. A girl of nineteen stated that vision in the right eye had always been defective. The ophthalmoscope (with a plus 12 lens) revealed the existence of a number of very fine hair like lines on the posterior surface of the cornea. The ophthalmometer showed at least six D. of astigmatism. The history of the birth which was ascertained from the mother, and also from the obstetrician, indicated that the labour had been a difficult one, and that birth had only been completed by a "stiff forceps pull."

Case 4. A boy of seven was brought on account of convergent strabismus and nystagmus. The mother was positive that the eye had turned in since birth. There had been a cut of the right temple close to the eye and the mother averred that it had been inflicted by the blade of the forceps. On examination by direct and focal illumination no evidence of corneal injury was found and in explanation of the squint it is assumed that the left orbit had been crushed and that a spicule of bone had been driven into it and had injured the external rectus muscle.

Case 5. A child of four months was noticed not to follow objects well. Also the eyes frequently turned up and often squinted. The birth was natural, but prolonged and difficult. The eyes were usually turned up and to the left and never turned to the right at any time. There was a peculiar jerking movement at intervals, something like nystagmus but slower. The optic disks were a little pale. Later a condition of general

muscular contracture developed. It is thought likely that a hemorrhage or several hemorrhages in different parts of the brain accounted for the defects.

ON THE TREATMENT OF DETACHMENT OF THE RETINA.—(*Die Ophthalm. Klinik*, April, 1907).—Tourcoing reviews the various methods of treating detachment of the retina and comes to the conclusion that subconjunctival injections of strong saline solutions are the best of all. The results are rendered more certain if this treatment is combined with ignipuncture and rest in bed. He proceeds in the following manner:

(1) Subconjunctival injections of a saturated solution of salt. The addition of three drops of a 1 per cent solution of acoin renders the injections almost painless. The latter are repeated at intervals of several days until vision has become normal or until it does not improve any more.

(2) Absolute rest in bed during the whole of the treatment and until the punctures with the cautery have healed.

(3) Scleral puncture with the cautery over the whole area of detachment.

(4) Treatment of myopia, syphilis, rheumatism, etc.

ON SUPERFICIAL DENDRIFORM KERATITIS (KERATITIS SUPERFICIALIS DENDRITICA).—Pretori (*Arch. f. Augenheilk.*, May, 1907).—The author discusses a form of superficial keratitis similar to but not identical with the usual form of dendriform keratitis. He describes the disease in the following terms: It begins two to three days after a rigor, and is characterized by a shallow dendriform furrow with grey raised edges. The average duration is thirty days. It generally heals without complications and does not cause any permanent serious damage. It is due to influenza.

DOUBLE AMBLYOPIA WITH PERINEURITIS DUE TO ABSORPTION OF THYROID GLAND.—Raimondi (*Rec. d'Ophthalm.*, March, 1907).—The case was that of a woman, aged 45 years, who was taking tablets of thyroid gland to make herself thin. After a month of this treatment she became nervous and weak and suffered from insomnia. Three weeks later her sight began to fail. Vision became reduced to one tenth and there was a central scotoma in each eye. The disks were congested and had a wine colored tint suggestive of the condition found in tobacco and alcoholic amblyopia. There was no history of the use of tobacco or the excessive use of wine and no suggestion of syphilis, albuminuria, glycosuria or disease of the heart or other organ. Raimondi is inclined to regard the visual trouble as secondary to an alteration of general nutrition set up by the thyroid, rather than as a direct action upon the optic nerve. Under treatment by quinine, arsenic and massage the patient recovered completely in a month.

LARYNGOLOGY AND OTOTOLOGY.

IN CHARGE OFW. E. SAUER, M. D.

MENTAL SYMPTOMS IN NASAL AFFECTIONS.—Fridenberg (*Med. Rec.*, June 29, 1907).—The author states that nervous disturbances and psychical symptoms may have a two-fold bearing on nasal diseases, according as they are in the nature of cause or of effect, it being sometimes difficult to decide whether a patient is neurasthenic or hypochondriacal on account of an old nasal trouble. However it may be, many patients suffering with nasal disease are nervous.

Local symptoms are the most common manifestations of nervous disturbances in nasal disease. Neuralgic pain and headache are present in obstruction forms and in accessory sinus involvement. Face-ache, radiating to the teeth, ears and brow is common in acute antral suppuration. Retention of secretion and chronic hypertrophic inflammation with the production of granulations and polypi may produce a dull intermittent frontal or supra-orbital headache.

The most marked mental complication is that observed in young mouth-breathers afflicted with adenoids. These children are dull, listless, inattentive, fall behind in their class and cannot concentrate their minds. Autointoxication may have something to do with the mental hebetude observed in these cases.

The author quotes Stucky as saying, that acute or chronic disease of the nasal accessory sinuses frequently gives rise to serious forms of mental disturbances as shown by the numerous cases of melancholia and suicide attributed to grippe.

SOME EFFECTS OF SPIRIT AND DRUG TAKING ON THE UPPER AIR PASSAGES.—Crothers (*Med. Rec.*, June 8, 1907), observes that the effects of spirits and drugs on the upper air passages are very marked and common, and yet they do not attract attention. In his experience of nearly thirty years in the constant study and care of spirit and drug neurotics, it is an exception to the rule to find persons who have used spirits and drugs, and do not suffer from catarrh and subacute inflammations of the nose and throat. Alcohol and tobacco seriously impair and finally destroy the vocal powers. These effects are due to both local and constitutional changes in the blood vessels and nerve filaments and absorbents. Cocaine causes a paralysis in the nasal passages extending down to the larynx and throat, when used constantly. The hearing is also affected, and profound anemia of the nasal passages is often a symptom. Tobacco is another irritant and narcotic to the upper air passages, and one of the worst forms in which it can be used is the cigarette, due specifically to the combustion taking place near the mouth, where all the gases and products come in immediate contact with the mucous membranes. Morphine and other forms of opium do not affect the upper air passages directly, but the constitutional effect produces an anemia and subacute inflammation of the mucous membranes.

THE RADICAL MASTOID OPERATION.—Bryant (*N. Y. Med. Jour.*, June 29, 1907).—The author considers the radical mastoid operation a certain cure in the most obstinate cases of otorrhea, thereby doing away with disturbances of the peripheral space organ, facial paralysis, total loss of hearing, metastatic abscess, etc. He places the indication for this operation in two categories: First, those cases of acute mastoid involvement with extensive infection or destruction of the temporal bone, the complete eradication of which destroyed tissue is demanded, requiring the complete evacuation of all the cellular structures connected with the middle ear and mastoid. Second, certain cases of chronic suppuration of the middle ear. In these cases the radical mastoid operation removes the sources of the suppuration and insures its termination.

In the second category of cases, we must consider whether the condition of the ear is serious enough to demand surgical interference, whether the ear disease is a serious menace to the rest of the body, whether cleansing and mild methods have proved futile, and whether the patient is in a sufficiently good general condition to stand the operation.

The author states that the chief accident associated with the operation is injury to the facial nerve which is due, first, to mechanical violence and can be avoided by good technique; second, perineuritis following the operation which is rare and never permanent. He summarizes, that the operation assures cessation of purulent otitis, that it offers immediate relief, that the hearing is much improved, that the cosmetic results are very satisfactory and that the facial nerve paralysis is very rare.

ASTHMA: OBSERVATIONS ON 300 CASES.—Smith (*Med. Rec.*, June 28, 1907).—Asthma, according to the author, is a spasmodic affection of the involuntary muscular fibers of the small bronchial tubes, caused by a reflex irritation of the pneumogastric nerve which contracts these fibers and gives rise to a dyspnea of a paroxysmal character. He says, the claim that true asthma is due to a vascular distention in the bronchial mucosa does not appear to harmonize with the classical physiological experiments, or to prove out in the clinical tests. While it is evident that even in true asthma there is vasomotor disturbances, it is not the vasomotor distention in the bronchial mucosa, but the asthma is due to the pressure on the asthmato-genous points in the nasal fossæ. This acts on the pneumogastric nerve and explains the various phenomena of true asthma. This pressure irritation may be on the septum, or, rarely, there may be no occlusion of the nares, and it may be due to a closed empyema of the ethmoid cells or sinusitis. In every case of true asthma the relief of pressure on these areas will give almost instant relief to the spasm, and the relief is made permanent by such treatment as will prevent such pressure.

The author, in observing 300 cases of asthma, has found that when the nasal pressure is relieved, the diet for the relief of the uric acid conditions and stomach disturbances can be entirely disregarded. He believes that the uric acid conditions and the stomach disturbances may be the starting point of the trouble, but the real trouble lies in the nasal fossæ, and when this is once relieved, the patient may eat anything he wishes, without bringing on an attack.

MEDICAL LAW AND MEDICAL JURISPRUDENCE.

 IN CHARGE OF

 IRVIN V. BARTH, LL. B.

ADDITIONAL COMPENSATION FOR TESTIMONY OF EXPERTS.—*Burnett v. Freeman (Kansas City, Missouri, Court of Appeals, June, 1907)*, 103 S. W. 120.—Plaintiff was a practicing physician in Kansas City. He had been called as a witness for the defendants in two suits in which they were plaintiffs on account of alleged personal injuries. He thereafter brought suit on a *quantum meruit*, claiming \$50 in each case for his services as an expert witness. The Court held that he was not entitled to extra compensation for the testimony given as an expert, though if required to perform services for the party calling him, in addition to giving evidence, he could demand payment for such services.

Further it was held that an agreement to pay the expert extra compensation for his testimony, which he was required to give under subpoena, was against public policy and invalid—and that, too, though the party to the agreement knew that it was the custom of the physician to charge extra for attendance as a witness at the time he was subpoenaed.

NOTE: Here for the first time in Missouri is squarely decided a question of the utmost importance to the expert, his legal right to demand from a party litigant calling upon him to testify as an expert extra compensation for the services so rendered. The courts of various jurisdictions have expressed different views; text-writers are by no means agreed, differing widely upon the force of logic advanced affirmatively or negatively—the entire subject is in doubt and confusion. As a decision which will for the immediate future, at least, control the trial courts in Missouri, the principal case is worthy of note and the reasons advanced interesting if not convincing. We, therefore, quote liberally from the opinion:

“Whether a physician could be allowed to charge for his services as a witness as an expert has been a question upon which the courts have entertained widely divergent views. In *Rogers on Expert Testimony*, 425, it is said that the cases in this country are nearly balanced, and that the question must be regarded as still an open one. Counsel have not cited a case from this state. * * * It is said that ‘there is a distinction between the case of a man who sees a fact and is called to prove it in a court of justice, and that of a man who is selected by a party to give his opinion on a matter with which he is peculiarly conversant from the nature of his employment in life. The former is bound as a matter of public duty to speak to a fact which happens to have fallen within his knowledge—without such testimony, the course of justice must be stopped. The latter is under no such obligations. There is no such necessity for his evidence, and the party who selects him must pay him.’

It is said that, while one owes a duty to the state to come forward, on proper formal process at the instance of a litigant, and testify to what he knows of matters in dispute, he ought not to be compelled to assist a private party in a suit about which he has no knowledge of facts in

controversy, and about which he is asked to contribute professional services. Those holding to the view that the professional man may refuse to so serve the litigant put it largely upon the ground that to force him would be akin to taking one's property against his will for the benefit of another. It seems to us that, in the discussion of the subject, there are some illustrations given which are not apt. Thus, in support of the view that the professional expert should be compelled to testify as to matters of expert opinion, it was asked, and the question has been often quoted since, that 'Were the Prince of Wales, the Archbishop of Canterbury, and the Lord High Chancellor to be passing in the same coach, while a chimney sweeper and a barrow woman were in dispute about a half-penny worth of apples, and the chimney sweeper or the barrow woman were to think proper to call upon them for their evidence, could they refuse it? No. Most certainly not.' Every one (including the expert) would yield ready assent to that statement. The expert would not say that he should not be called to give testimony to anything he may know of the case as any other witness exalted or lowly. His claim is that he ought not to be put on any other plane than the ordinary witness, and ought not to be made to contribute from his calling in life to the benefit of a stranger. It must be admitted that there is strong argument to support either view. It is not far-fetched to suppose a physician or surgeon of such wide reputation for skill and ability that his service as a witness would be required to such an extent as to seriously cripple the practice of his profession for his own benefit. There are instances where a professional man has devoted his life to the free service of his fellows, but it has never yet been said that he could be compelled to do so. If it were known that the free services (save ordinary witness fee) of the most eminent professional men of the country could be compelled at the instance of any litigant, might he not be required to devote a great part, or all, of his time in attendance upon court or in giving his deposition for the purpose of answering hypothetical questions on suppositional facts? It is sufficient to call for grave consideration when a rule is asked to be enforced which could lead to such results. On the other hand, all must concede that the physician, surgeon or lawyer is not entitled to any more consideration than an expert in any other calling. A farmer, a mechanic, a merchant, and he who follows most any avocation, may be qualified to testify as an expert in cases which call for the peculiar knowledge which he possesses, and which he has spent his time and money in acquiring. If either of these could demand compensation (more than an ordinary witness fee) the administration of the law would undergo a radical change.

As illustrated in *Ex parte Durant*, 53 Ala. 394, there may be litigation concerning the sale, or contract for sale, of any commercial commodity. The contract could be proved by the parties, documents, or those acquainted with its terms, and yet it might, perhaps, be necessary to prove the value of such commodity in certain markets on a given day. Dealers in such commodities, entire strangers to the litigant, could be compelled to testify as to such value, though it involved a special knowledge gained in the prosecution of their special calling. Like instances in great numbers could be given, all of which should be classed as expert knowledge, gained at expense to the possessor and out of which he obtains his living.

After consideration of the question in all its bearings, we have arrived at the conclusion that a witness called to testify as an expert, whether as a physician or in any other branch of knowledge, may be compelled to state his opinion upon hypothetical or other questions involving his professional knowledge without compensation, other than the witness fee fixed to the ordinary witness. It is a duty he owes to the state in aid of its orderly existence and in return for which he enjoys its protection and the administration of its laws in his behalf, not least of which would be the compulsion of other experts, whether they be the man who practices a profession, the artisan, the artist, the tradesman, or other person, to come to his aid when needed in litigation in which he might unfortunately be involved. * * * It should be remembered that the duty the expert owes to the state, as a performance of citizenship, rather than rendering of service to an individual, pertains to an obligation to give the court the benefit of the knowledge he has in store at the time he is called upon. He can not be required to especially fit himself for lines of inquiry. He should not be expected to make examinations, perform professional services, and the like, for that is not the office of a witness. He could not be compelled to do that any more than the ordinary person, with no knowledge of the facts pertaining to a case, should be required to go and post himself so as to become a witness."

Following this the court quotes and approves authorities holding that the physician may legally claim compensation when to qualify himself he must make post-mortem examinations or undertake any other operation of skill, analyze stomach contents and perform like services or even when to qualify himself he must attend upon a trial and listen to testimony.

CORRESPONDENCE.

LONDON LETTER.

[FROM OUR OWN CORRESPONDENT.]

The chief events of interest have been the meeting of the British Medical Association at Exeter and that of the British Association for the Advancement of Science, held at Leicester. It was somewhat unfortunate that these two great annual gatherings should have clashed this year, because although at the British Association, medical matters are only directly concerned in the Physiological Section, yet subjects are brought forward in that section which for adequate discussion require the presence of leading physicians and surgeons. The president of the Physiological Section this year is the director of the Physiological Laboratory of the University of London, Professor Waller, whose interest in this branch of science is distinctly hereditary, as he is the son of the physiologist of that name, well-known for his original work fifty years ago. In the opening address of the section, the subject of the action of anaesthetics was dealt with and Professor Waller committed himself to some sensational remarks and figures as to the frequency of deaths from anaesthetics. He stated that the percentage of chloroform vapour inhaled was not known in the methods in use. In the discussion which followed it was pointed out by several prominent men that these assertions were not justified and the Vernon Harcourt inhaler was instanced as giving accuracy and regularity of dosage, with maximum safety in results.

An interesting debate, on a later day, was opened by Professor Cushny on the effect of small doses of alcohol. A valuable survey of recent research was given, and in summing up his remarks the professor said that alcohol may be of some value in therapeutics as a means of making food more attractive, and thus of improving digestion. It possesses some food value itself. It acts as a cerebral depressant, and for that reason may be useful in certain diseases. It may aid a failing heart. A small dose has no definitely poisonous effects upon the tissues, and repeated small doses have not been shown to be deleterious. In the course of the debate Sir Victor Horsley, as usual, utterly condemned the use of alcohol for any medicinal or dietetic purpose, and strongly urged total abolition from the point of view of social science.

Not a single clinical physician of any efficiency and standing supports this extreme view. Some remarks by Sir James Crichton-Browne at a recent dinner have caused no little flutter in the abstinence dove-cotes. He was speaking to a gathering of the Medico-psychological Society, and drew attention to the fact that, though alcohol was alleged to be a potent

factor in the production of mental diseases, an informal census revealed that 94 per cent of those present at the dinner were partaking of alcoholic beverages. This figure corresponded to that obtained at another medical dinner which he had attended shortly before. This number certainly does not overestimate the proportion of medical men in this country, who believe in the value of alcohol as a beverage and as a drug.

The annual general meeting of the British Medical Association was eminently successful. Exeter, the place of meeting, is an historical cathedral city, whose first charter was signed by Henry II. It is the county-town of Devonshire, the land of fair women, clotted cream and many other good things, in the heart of the "West Country," which has furnished so many famous men towards the making of English history. The pride of the West-countryman in his native parts is not surpassed in any other part of the world. They are one and all most kindly folk in every way, so that the Association has had a "real good time." The proceedings were taken up with the discussion of matters worthy of first importance. The president for the year, Dr. Henry Davy of Exeter, devoted his opening address to the subjects of physical culture and exercise, especially as required by children, practical dietetics, and the prevention and hygienic treatment of tuberculosis. He urged the necessity for instruction of the public on all these matters by the medical profession, because of their important bearing upon a healthy national existence, using as his text two points in the Darwinian theory, first, that any organ or structure can only be kept in a proper condition of health and development by proper and adequate use, and, secondly, that only the fittest survive in the struggle for existence; natural laws, which must be considered as applying as equally to nations as to individuals. No system of education, therefore, is good which does not aim at producing healthy bodies as well as well-trained minds. In order to emphasize his argument, Dr. Davy was tempted to adopt the idea of national physical deterioration, which has been proved to be somewhat of an exaggeration.

The Address in Medicine was delivered by Dr. Hale White, Senior Physician to Guy's Hospital, who took as his subject a plea for accuracy of thought in medicine as the essential condition of progress. He right worthily maintained the traditions of his famous hospital and school, providing his hearers with ample food for thought, and telling them at the same time some home-truths, which would certainly cause considerable searchings of heart. As became a pupil and successor of Gull and Wilks, Dr. Hale White insisted that medical men should have the courage to say they do not know when faced with a doubtful case for which no satisfactory solution can be found. The desire for explanations is very marked in all human beings, particularly when they are patients. Rheumatism, gout, or the present popular favorite, uric acid, may be enough to satisfy the patient, in that a name is furnished. With regard to the uric

acid craze, Dr. White's remarks, contemptuously sarcastic, might well be taken to heart by many of the laity, and, it is sad to admit, by many in the profession as well. The "liver out of order" diagnosis, which rivals uric acid in popularity and in veraciousness, was condemned, together with all other make-believes, which show the tendency to pacify the too-prevalent dislike to admit a lack of knowledge by the use of mere words, which really retards progress towards a true explanation. The proper scientific attitude of a healthy scepticism with regard to facts based upon authority, was insisted upon. As regards new ideas, hasty acceptance and would-be critical dilatoriness, obstruction in plain words, are both out of place. What is required is the evenly balanced mind trained to estimate the value of novel suggestions. It is an excellent and most philosophical address, well worth inwardly digesting by every medical man.

Mr. H. T. Butlin, consulting surgeon to St. Bartholomew's Hospital, gave the Address in Surgery, choosing as his topic the contagion of cancer in human beings and auto-inoculation; an aspect of the subject which has hitherto not received much attention, and to which he has devoted much time and consideration.

The main purport of the address was to prove auto-inoculation, because if this can be proved to take place "by such evidence as would be admitted in a court of law, there is a *prima facie* case for contagion." Reports of cases were given on which he claimed to rest his case and, indeed, to prove it. The practical bearings arising therefrom are of importance, for every possibility of wound-infection during operation must be most carefully guarded against.

The death of Sir William Broadbent removes one of the greatest figures in modern medicine, and leaves a gap not easy to fill. His published works bear witness to his high position as a scientific physician, no less than to his skill in the art of treatment. *Nihil quod tetigit non ornavit.*

August 9th.

LETTER FROM THE PHILIPPINES.

[FROM OUR OWN CORRESPONDENT.]

During the last month active operations have very nearly ceased and the American troops have been withdrawn from the field, the Pulajane insurrection for the time being, at least, appearing to be crushed. In Leyte this was largely brought about by the capture of Faustino Ablen, who was responsible for the continued resistance of the natives against the authorities. Ablen exercised a mysterious religious power over his followers, from time to time absenting himself for a few days and upon his reappearance, claiming that he had been to Heaven and had returned with renewed power. By such devices he managed to inspire faith

in his infallibility even in the face of defeat. He often encouraged his men to go into battle blindfolded, telling them that thus prepared they would be invincible and that no harm could befall any of the faithful so arrayed, and this accounts for the number of native bolomen found dead and blindfolded after engagements with the troops.

Another superstition indulged in is the so-called "anting-anting," which is no doubt responsible for much of the courage exhibited by these people in fighting. "Anting-anting" is the name applied to various cabalistic signs and figures, usually either sewed in red upon a handkerchief or shirt or printed rudely upon small circular bits of paper. There is the proper "anting-anting" for everything, according to the high priests of the Pulajanes, some protecting from disease and death, others from bullets, and still others from spears. Some of it, such as the paper variety, is often swallowed as a protection, and bullets which have been blessed are also sometimes swallowed.

I have examined a good many specimens of this "anting-anting," but have not been able to see any rhyme or reason to it, nor have I ever found any one who could decipher or translate it in any way. Like much other religious nonsense, the more mysterious it is, the better it works, and the less the people know about it, the better it goes. In Ablen's case, Fate willed that the "anting-anting" should slip up and an American bullet blinding him in one eye, he was captured and the insurrection of a year was brought to a close. I saw the old man, for he is well along in years, at the military hospital at Tacloban, shorn of his power and chained ignominiously to his bed, an object of curiosity to all. Like many other things which seem great at a distance and shrink into insignificance when near at hand, he seemed a small and contemptible—and to those who had not lost time, patience, friends and relatives during the campaign—perhaps even a pitiable object.

One of the mysteries to me is, why Americans coming to the islands invariably attempt to learn Spanish, and having once acquired a smattering, persist in using it with the native who perhaps is anxious to learn English. With the passing of Spanish power here, there passed also the need for the perpetuation of the Spanish language in the Philippines, and I believe that if we are to make much out of these possessions, English should everywhere be used. To tell the truth, although one hears a good deal of Spanish spoken, it is in the majority of cases anything but pure Castilian, and the initiated have dubbed the lingo "bamboo Spanish." It is a horrible mixture in which English, native dialect and bastard Spanish are conglomerated; no attempt at proper tenses or pronunciation being made. One of the absurdities I have witnessed is that of a gentleman who persisted in talking to his muchacho servant in very execrable Spanish, when the boy could understand English perfectly well and always by preference, used it.

Americans are used to thinking of the Philippines, when they do think of them at all, as being very hot, very dirty and very unhealthful, some even being so fatalistic that they believe a disease germ is waiting for them at the entrance to Manila Bay. During the last six months there has not been a case of cholera, plague or smallpox in the city of Manila and the death rate is but 29. When one considers that not so many years ago Manila was one of the "plague spots" of the earth, it seems as if we had cause for congratulation upon the success of American sanitation. There are two places in the Islands which could properly be called health resorts, one at Baguio in northern Luzon, and the other at Los Banos, just outside of Manila. Baguio is at an elevation of several thousand feet and is actually cold, the thermometer at one time during January of this year falling below freezing. There are good hotels there and the place can be reached by rail, the Manila Dagupan Railroad, the only one in the Islands. During the hot season this place has been very popular and has had a large number of visitors. The Army has taken advantage of it and now sends men there who are in need of rest and recuperation. Los Banos is used as a health resort on account of the hot springs. The waters have been piped and bathing pavilions established; Los Banos is a military station and rheumatics and venereal cases are sent there for treatment by the military authorities.

The commanding general of the Philippines Division has been so much impressed with the healthful situation of Camp John Hay, as the military station at Baguio is named, that it is said he is strongly in favor of making the tour of service of the American troops in the islands five years instead of two, as is now the case, his plan being to send officers and men, at the least sign of physical or mental breakdown, to the mountains for recuperation. So far as I know this plan has not been favorably received, for while many American soldiers wish to stay in the Islands and to re-enlist here, they do so, almost invariably, because they wish to get what is known as "double time" towards their retirement, service in the tropics being counted at double that of home service in computing the thirty years necessary for retirement. Five years in the Philippines, unless a man has interests here in the way of commercial or other enterprises, is too long and one drops too much out of the affairs of the world in that time. Then again it makes a difference where one is during his stay here; Manila is not the Philippines. I think one could be very contented in or around Manila for a number of years, but I know for a surety that two or three years in some of the southern islands is an eternity. It is a curious fact that a man's memory and his ability to do mental work as well as his power of initiative all steadily decline during his residence in the tropics. What the cause of this is I do not know; it may be that in allowing himself physical relaxation and limiting the amount of work he performs, which he *must* do, he also

fails to use his mind properly and the mind not being properly exercised, naturally fails. I have seen many instances of this loss of memory, one in a naval officer who had been over for two years on the Asiatic station, being very marked so that there were many embarrassing breaks in our conversation, due to his inability to remember some of the commonest terms and phrases. He was of a marked blonde type, and stated to me that two of his brother officers, also blondes, had suffered in much the same way, his supposition being that the tropical sunlight, as pointed out by Woodruff, is the underlying cause of the mental deterioration.

Irritability is another thing that worries many of us. One often finds, after a year or so in the tropics, that he is becoming very sharp-tempered, that little things annoy him and that his language is often not over-polite. In my own case I hope this is only temporary, since I am sure my friends would not know what to make of the change! At any rate those of us who are troubled with sharp tempers and sharper tongues hope that it is not a sign of increasing age, but is due rather to some mysterious influence wielded by Old Sol at the equator.

I recently witnessed a small sized epidemic of beri-beri. There was nothing unusual about it, but I am impressed, the more I see of this disease, with its peculiarities and vagaries. One of these cases was diagnosed as mumps by a physician who has seen not a little beri-beri, but it turned out that this was the prominent symptom of the disease. The parotids were both enormously swollen and could be picked up in the fingers, but curiously they were not very tender. The condition of the man suggested meningitis, so great was his stupor. He recovered in a week or so, but has since drifted into a condition of chronic beri-beri.

The Surgeon General of the Army has directed that in all cases of this disease occurring among soldiers the feces be examined for the eggs of *ankylostoma duodenalis*, it being suspected that hookworms had something to do with the etiology. In a great many cases this has been done, but in most of these, so far as I know, if hookworms were found their number was small, so that it seems more likely a coincidence than a cause, since we know that hookworms produce pathological results in direct ratio to the actual number present. However, the fact that one investigator has shown that in beri-beri there sometimes occurs a specific duodenitis, would tend to make the hookworm suggestion worth following. Another case of the same disease baffled several of us for two or three weeks. The victim was rather an old man and he had undoubted beri-beri of the wet variety. A peculiar thing in his case was the amount of abdominal swelling and dropsy. This was so marked that he was tapped several times, but each time he rapidly filled again. It seemed an unusual case, although fairly well marked dropsy is not uncommon in beri-beri, especially if the heart has failed. However, just before he died I discovered a very marked *vino* history in the old man; he had

been a hard boozier for years. So two days before he died we resolved the case down to chronic alcoholic neuritis and alcoholic cirrhosis of the liver, a simple or "garden" diagnosis and nothing to do with tropical disease. That is often the case and one is apt to forget when he is in the tropics that not every disease is a tropical one.

Manila, July 15th.

PARIS LETTER.

[FROM OUR OWN CORRESPONDENT.]

CARDIAC HYPERTROPHY AND EXPERIMENTAL ALCOHOLISM.

Can a hypertrophy of the left ventricle which is generally linked with mechanical obstacles of the general circulation (valvular, arterial and renal lesions), ever occur as the result of other etiological factors? Human pathology furnishes us some examples, but recent laboratory experiments have succeeded in demonstrating its possibilities beyond a doubt. At a meeting of the Société de Biologie held on July 20th, M. Aubertin communicated the results of his experiments on certain animals that he had subjected to a slow absinthe-intoxication. A rabbit which had died after six months' treatment with absinthe showed an enormous hypertrophy of the left ventricle, in spite of the absence of the usual obstacles which are generally held responsible for the presence of the disease.

OCULAR REACTION TO TUBERCULIN AS A MEANS OF DIAGNOSIS IN A TUBERCULAR SUBJECT.

M. A. Calmette of the Institute Pasteur at Lille, recently stated at the Académie des Sciences, that when a drop of an aqueous solution of tuberculin (1 to 100) is instilled in the eye of a subject affected with tuberculosis, the palpebral conjunctiva and the caruncle become congested in from three to five hours after the instillation; the color of the conjunctiva being a deep red. At the same time, increased lachrymation is established and accompanying this there is a sero-fibrinous secretion which gathers in the inferior conjunctival cul-de-sac or in the inner angle of the eye. At the end of twenty to forty hours all traces of the congestion disappear. In the non-tubercular, this reaction is absent. Many eminent clinicians have verified these facts, the value of which is most important from a practical point of view. This simple and absolutely innocuous process, then, is the means of determining at the expiration of twenty-four hours the presence or absence of an active tubercular focus.

OCULAR SIGNS IN THE DIAGNOSIS OF TYPHOID FEVER.

Encouraged by the labors in behalf of the serum diagnosis in tuberculosis, M. Chantemesse has prepared a powder of the toxin of typhoid fever by precipitating, with the help of absolute alcohol, a certain quan-

ity of liquid toxin. One drop of an aqueous solution of this powder ($\frac{1}{4}$ millegram to 10 drops of water) is dropped on the inner side of the lid. In case the subject is free from typhoid fever a slight redness with some lachrymation occurs after some hours, to disappear in the space of five or six hours. On the other hand, when typhoid fever is present the reaction is much more intense; a thick sero-fibrinous exudate appearing, which may last until the following day; sometimes not ceasing until two or three days after the inoculation. As yet, M. Chantemesse cannot positively state how soon the ocular reaction takes place, but it is hoped by this method to achieve that which is most important—an early diagnosis of typhoid fever.

DIGITAL IMPRESSIONS AS A MEANS OF IDENTIFICATION.

At a meeting of the Academie des Sciences held on July 1st, M. Dastre read a paper which ought to be of interest to criminal anthropology and the police departments in all civilized countries, on account of his insisting on the establishment of an international chart illustrating digital impressions, by which the apprehension of all criminals could be more easily accomplished. Here are his conclusions: Digital impressions in the same individuals are unchangeable from earliest youth until advanced old age; the impression of one finger differs from another just as the fingers of one individual differ diametrically from those of another; therefore, the impressions of all fingers are necessary so that identity may be established beyond a doubt. In conclusion he states that the value of digital impressions is at least equal to that of all the other physical characteristics.

The study of digital impressions or dactyloscopy suffices to establish the best method for identification. The system has this advantage, it is applicable to all individuals, no matter what their age. Moreover, it costs less than any other for the reason that a large personnel is not required.

MEDICAL RESPONSIBILITY.

Le Tribunal Correctionnel de Paris recently handed down its opinion in a case which has interested all French physicians on account of the question involved, viz: Is a physician responsible for eventual complications when they arise through no fault of his own? A physician had cured a case of acute appendicitis by ice applications, but a superficial eschar appeared, presumably the result of the treatment. The patient, though cured, entered suit for damages amounting to 50,000 francs. The court dismissed the case and assessed the costs against the plaintiff. The court held that inattention to the rules of prudence, habitual negligence and ignorance, should make the physician responsible in every case, but since the slight inconvenience was the result of an approved method of treatment belonging to the province of medical science, and was not the outcome of any sort of negligence on the part of the physician, it could not hold him responsible.

August 12th.

OBITER DICTA FROM FOREIGN JOURNALS.

IN DEFENSE OF THE ADVOCATES OF SLEEP.

"Arise early and work! Let us be active," recently exclaimed an enthusiastic professor at one of the French universities.

This apostrophe to energy impels Leon Mac-Auliffe, in *La Clinique de Paris*, to come to the defense of the benefits accruing from sleep. And though he does not approve of any one today following in the footsteps of Gargantua, who prior to the reform instituted by his instructor, Ponocrates, asserted "that a day could not begin before nine o'clock," thus following the axiom laid down by King David that it was detrimental to one's health to arise before daybreak, he thinks the question merits more serious thought than is given it by our modern Ponocrateses, the professors at the universities.

Granted that what educators call moral force, mental vigor or energy originates in the general equilibrium of the organism, particularly in the functional activity of the brain, one can readily understand the difficulty of infusing this quality into those whose equilibrium is below par. But for pedagogues to state that this energy or force is the rightful appanage of the diligent and can never be inculcated into the indifferent, is decidedly false reasoning.

Physiologists and experience have taught us that good scholars are invariably healthy and exhibit evolutionary processes that go on without let or hindrance; while backward scholars are hampered by inherited physical disabilities and show an evolution checkered, to say the least. This being the case, reason should prompt us to suggest an outdoor life for a certain class of students; physical exercise, the stimulus of vitality, for another; so that by easy stages digestion of intellectual work could be established without the usual, irksome scientific methods. If this were done, ere long qualities heretofore hidden would become evident and a genuine intelligence would manifest itself. The counsels, the examples, the exhortations, the reprimands, all these moral inducements which medical philosophers à la Dubois of Berne, call mental representations (*representations mentales*) are hardly capable of stimulating even for a time the brains of the backward. Equilibrium that stands in relation to the functions of the body is the true factor of energy. In other words, health and that alone, is the soil from which all energy springs.

At the first Congress of School Hygiene, M. Lucien Marcheix made the following statement: "Children between the ages of six and nine years ought to have eleven hours' sleep; from nine to twelve, ten hours; from twelve to fifteen, nine and one-half hours; from fifteen to eighteen, nine

hours." Any rule such as this is imperfect for the reason that, in a physiological sense, the regulations it embraces are not applicable to those individuals whose manner of living and thinking show a great diversity. In support of this contention it is but necessary to quote the sane words of Professor Forel (*The Mind and the Nervous System—L'Ame et le Systeme Nerveux*, Paris, Steinheil, 1906): "The importance of sleep to induce cerebral repose has for a long time been greatly misunderstood. The greater the mental work, the greater the need for sleep. Certain old men who live regularly and exercise their mental functions sparingly can attend to their business affairs after five or six hours sleep, sometimes after less, because following their greatest activity there are short periods of repose which are beneficial to both mind and body. On the other hand, the man who is burdened with years and whose work demands a mental activity similar to what it was in his prime, does his nervous system a great harm if his sleep is not prolonged so that his normal equilibrium can be re-established." This succinct statement sums up all one could say on the subject.

Is there today in the length and breadth of France a university that has felt the need of a special dormitory for those students who require additional sleep at a time when the severity of examinations weakens and jades them, even though the Medical Inspector were to suggest it? A Medical Inspector advises in the case of an outbreak of an epidemic or when a student is afflicted with a grave disease, but as yet due, no doubt, to an unwillingness on the part of the pedagogues to recognize the truth, he has not been able to make clear to them, that education to accomplish something, must not ignore physiological characteristics. When this is realized, the "sleepers" will come in for some share of attention and be the object of considerable solicitude on the part of hygienists.

If all Medical Inspectors would memorize the words of Professor Forel and put them to practical use at the time examinations bring on augmented cerebral tension, demanding prolonged sleep, we would no longer hear the stereotyped advice dealt out to students—*Be active no matter what your fatigue may be. The rule is, all students must arise at the same hour.*

HAECKEL AND EVOLUTION.

Professor Ernest Haeckel's three lectures on Religion and Evolution, recently delivered at the Singakademie at Berlin, have been published in book form. These lectures give us pause for two reasons: first, they are equal if not superior, to anything heretofore written on the subject of evolution and, secondly, according to the author himself, they are his last public utterances. A very good idea of the rich material each lecture contains may be gathered from a synopsis of the first discourse: Haeckel draws a

parallel between the theory of descent and the dogma of the Church; he shows the great characteristic of the intellectual life of the nineteenth century—the fierce combat against the theory of evolution. The Book of Genesis was continually set in opposition to the philosophical idea of evolution, and not until C. F. Wolff shattered the theory of preformation by his studies of the egg of the chicken, was embryology founded. Phylogeny was less advanced; Linnaeus still spoke of the miracle of creation, but Lamarck, in 1809, explained heredity. Darwin (1859) continued Lamarck's theories and added thereto natural selection. Huxley developed Darwinism and then Haeckel himself continued on the same lines after 1874. The Church opposed Darwinism; in Berlin scientific circles the obligatory idealism of Hegel was professed, even though Darwin's theories illuminated some minds in 1859. The protests of the Church affected very greatly the savants, even Virchow being undecided. After years, evolution triumphed in all branches of biology and finally forced the Church to adapt itself in part to its theories. The Jesuit priest, Wassman (1904), in a balderdash rigmarole, attempted to prove that although Darwinism was not dead, the theory of a supernatural creation was firmly established, and that St. Augustine and St. Thomas Aquinas were the real founders of evolution. Thus the Church adopted Darwinism, though mutilating its cherished theories by advocating a firm belief in the miracle of the earliest inception of life.

BOOK REVIEWS.

MATERIA MEDICA AND PHARMACY. By Reynolds Webb Wilcox, M. A., M. D., LL. D., Professor of Medicine at the New York Post-Graduate Medical School and Hospital; Consulting Physician to the Nassau Hospital; Visiting Physician to St. Mark's Hospital; Ex-Président of the American Therapeutic Society; Vice-Chairman of the Revision Committee of the United States Pharmacopeia, etc. Seventh Edition. Revised. P. Blakiston's Son & Company, 1012 Walnut street, Philadelphia, Publishers.

This is the seventh revised edition of *Materia Medica and Pharmacy* issued by the above well known authority. It is merely a repetition of the previous well known editions without many important modifications.

DISEASES OF THE INTESTINES AND PERITONEUM. Prof. Dr. Hermann Nothnagel. Late Professor of Special Pathology and Therapy, University of Vienna. Edited, with additions by H. D. Rolleston, M. A., M. D., F. R. C. P., Physician to St. George's Hospital, and to the Victoria Hospital for Children, London; Sometime Fellow of St. John's College, Cambridge. Second Edition, Thoroughly Revised. Authorized Translation from the German. Under the Editorial Supervision of Alfred Stengel, M. D., Professor of Clinical Medicine in the University of Pennsylvania. W. B. Saunders Co., Philadelphia and London, Publishers.

This new edition of Nothnagel's *Encyclopedia of Practical Medicine* (American Edition) is a revised edition of the same one issued in 1904. The absolute worth of this volume needs no special recommendation further than that of being a part of this remarkable series in medicine, a lasting memorial of the distinguished author whose death we have unfortunately to deplore. The additions by the author make it one of the most thorough and exhaustive texts with the appended literature on the diseases of the intestines and peritoneum available at the present time.

SCHLEIF'S MATERIA MEDICA AND THERAPEUTICS. A Pocket Text-Book of *Materia Medica*, Therapeutics, Prescription Writing, Medical Latin and Medical Pharmacy. By William Schleif, Ph. G., M. D., University of Pennsylvania. Philadelphia. New (3d) edition, 12mo. 470 pages. Cloth, \$2.50, *net*. Lea Brothers & Co., Philadelphia and New York, 1907.

This volume is the third edition by the author in a part of this series of popular text books of the above publishers. It covers the entire *Materia Medica* in practical use at the present time. The newer drugs of the pharmacopeia, food stuffs, and many of the important unofficial drugs are given their proper consideration. It affords a handy reference, especially for the busy practitioner.

HARE'S THERAPEUTICS. A Text-Book of Practical Therapeutics, with Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M. D., B.Sc., Professor of Therapeutics and *Materia Medica* in the Jefferson Medical College of Philadelphia, Physician to the Jefferson Hospital, etc. New (12th) edition, enlarged and thoroughly revised to accord with the eighth decennial revision of the U. S. Pharmacopeia. In one octave volume of 939 pages, with 114 engravings and four colored plates. Cloth, \$4.00, *net*; leather, \$5.00, *net*; half morocco, \$5.50, *net*. Lea Brothers & Co., Philadelphia and New York, 1907.

This volume is the twelfth edition of *Practical Therapeutics* issued by this well known authority. It is thoroughly up-to-date, and far advanced beyond the ordinary books on therapy extant at the present time. The general plan and system of previous editions has been carried out with their revisions as borne out by the established therapeutics of today. As a complete book on therapy, both from the viewpoint of experimental and clinical therapy, this volume must receive highest commendation.

ATLAS AND EPITOME OF DENTISTRY. By Prof. Gustav Preiswerk, of Basil. Edited, with additions, by George W. Warren, M. D., Professor of Operative Dentistry at the Pennsylvania College of Dental Surgery. With 44 lithographic plates in colors, 152 text-illustrations, and 350 pages of text. Philadelphia and London. W. B. Saunders Company, 1906. Cloth \$3.50 net.

This work is a most attractive, scientifically accurate presentation of the modern trend of dental thought in Germany. The text is clear, and well translated. The embryology, anatomy, and pathology of the teeth are exhaustively treated and excellently portray many normal and abnormal conditions. The treatment or practical dentistry is not so thoroughly considered.

INTERSTATE MEDICAL JOURNAL

PUBLISHED ON THE FIRST DAY OF EVERY MONTH BY THE
INTERSTATE MEDICAL JOURNAL COMPANY

SUBSCRIPTION, \$2.00.

FOREIGN SUBSCRIPTION, \$2.50.

SINGLE COPY, 25c

Subscriptions may begin at any time. Volume ends with issue of December.

Original Articles.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. French and German articles will be received and translated free of charge, if found desirable for publication.

Reprints (200) of original articles will be furnished gratis to authors making the request, which must accompany the manuscript. Covers to these, and extra reprints, will be furnished at net cost.

Illustrations, such as plates, half-tones and zinc etchings, as in the judgment of the editors are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

Manuscripts will be returned, if stamps be sent for this purpose.

Advertisements.—First advertising form closes on the 10th of the month; last advertising form closes on the 15th. Time should be allowed for composition of advertisements and for the sending and return of

proofs. Advertising rates will be sent on application.

Change of Address.—In ordering a change of address, it is important that both the old and new addresses be given.

Discontinuances.—The *INTERSTATE MEDICAL JOURNAL* is not discontinued at expiration of subscription, but is sent until an explicit order to stop is received or a notice sent by us. A large majority of our subscribers prefer not to have subscriptions interrupted and files broken in case they fail to remit before expiration. It is therefore assumed, unless notice to discontinue is received and the amount of back subscription paid to date, that the subscriber wishes no interruption in his series. Journals returned are not notice of discontinuance.

Remittances should be made by check, draft, registered letter, money or express order. Address all communications to *INTERSTATE MEDICAL JOURNAL*, Linmar Building, St. Louis, Mo.

INTERSTATE MEDICAL JOURNAL.

VOL. XIV.

OCTOBER, 1907.

No. 10

EDITORIAL.

THE WASSERMANN SYPHILIS REACTION.

It is a curious fact that many disputes in medicine are decided in a fashion that might have been prophesied if the disputants had always taken a more or less detached position. In many of the questions that have worried the medical mind the problem at issue is lost sight of in the maze of personal feelings that have been aroused. If it were possible to take the attitude of one who is patiently waiting until available data are at hand there would be little need of the heart-breaking waste of argumentative hours in medical meetings. For many years there has been waging a battle between those who believed that syphilis was the chief cause of tabes and dementia paralytica and those who did not believe so. The arguments for the positive position were based upon the fact that in a large percentage of patients with these diseases there was an unmistakable history of previous syphilis much larger than would be found in an equal number of individuals sick with other diseases of the nervous system. The opponents of this idea were opposed to its acceptance on the ground, chiefly, of the unreliability of such statistical data, and on the fact, so they asserted, that a syphilitic history could or could not be obtained according as one went about it. It is obvious of course that the dispute depended absolutely on two things, first on the weakness of the statistical method in medicine, and secondly, on the fact that there was no way that could be used to determine whether a patient suffering from these diseases had had syphilis or not, except upon his own statement. A small percentage of cases did as a matter of fact show traces of late syphilis in a clinical way, but these formed too small a part to be of any statistical importance.

Whatever the imperfections of the method were the almost universal conclusion was that syphilis was the most important aetiological factor in the two diseases. The mass of experience made belief in this conclusion almost irresistible. The question remained in this unproven state awaiting some further discovery which might attack the weaker part of the argument or bring further evidence to its support. The final solution now seems at hand. The weakness of the attempted solution was simply the inability to decide in a given case from objective examination if an individual who had one of the diseases had also had previously a syphilitic infection. Wassermann and his pupils have found that there is in the blood serum, and more particularly in the cerebro-spinal fluid of patients who have previously had syphilis, a specific reaction depending chiefly upon the presence of syphilitic anti-

bodies in the fluid. The technique is somewhat complicated as yet, but not too much for ordinary laboratory methods. The results obtained so far have led to surprising results in the matter of supporting the conclusions that have been arrived at by the statistical methods previously in vogue. It seems beyond question that Dementia Paralytica depends for its development upon a previous attack of syphilis. This seems to be equally true of tabes. The absolute proof of these two suppositions now simply rests upon a large series of observations which are no doubt at the present time being made. The suggestive thing about this discovery is that in the face of a problem in medicine in which some part of the method of proof is weak, it is far better to wait until the method itself is strengthened by new discoveries than to engage in discussion to no definite purpose. In the meantime the collection of careful statistics upon the point at issue will save much heartburning, and incidentally much time.

DIFFICULTIES IN ANTIMALARIAL TREATMENT.

The clinician who indulges freely in polypharmaceutical habits and who has received many knocks from various scientists will receive much comfort from the researches of Ehrlich on the trypanosomes. This pharmacologist ascertained that these protozoa become very resistant to various trypanocidal substances—trypanred, atoxyl, parafuchsin, etc., after administering these drugs to the host for some time (Harbin Lectures, *Lancet*, Aug. 10). Another striking feature is that this immunity is transmitted to the offspring.

The only remedy we possess to counteract this immunity is to give several of the trypanocides at the same time; only in this way can we hope to destroy all the trypanosomes in the infected animal. To quote his own words: "One is, however, justified in hoping that it might be possible to cure the disease without endangering life by the simultaneous administration of three, four or five substances, chosen in such a manner that their action is concentrated on the parasites, while in the organs of the vertebrate host they are distributed over several different organs."

It is only natural that we compare these researches with the clinical experience that has been obtained in the treatment of malaria. In certain parts of the country the plasmodia are very resistant to the effects of quinine. This seems especially true in those regions where this drug has been given to many infected persons for several generations. It is often found necessary to give several drugs at the same time to destroy the hæmanœbæ. Among these drugs mercury holds a high place, and it is curious that Ehrlich found that this substance has also trypanocidal powers.

Another popular adjuvant is arsenic, and for many years it has been the favorite drug in those cases in which quinine failed, that is in those in which the plasmodia had become resistant to the cinchona alkaloid.

We must admit then that polypharmacy is often very helpful in malarial diseases. Sometimes it is necessary to give calomel, quinine and arsenic at the same time in order to overcome the resistance of the protozoa.

Methylene blue must sometimes be given with quinine, and other dyes may be substituted in the future. The beneficial effect of such an irrational mixture as Warburg's tincture may receive an explanation under this rule. The several antiperiodics which it contains overwhelm the protozoa while its toxic action is so distributed as to be harmless to the host.

TRAGI-COMEDIES IN THE PRACTICE OF MEDICINE.

Modern intellectualism seems as far removed today from the practice of medicine in this country as it was some twenty years ago, when it was not only frowned down by our leading and "prominent" physicians as a thing too purile to contemplate, but was flouted as a decadent insistence, foolishly thrust upon a body of superior men so as to demean them to the low level of the masters of the exact sciences, the literateurs and the artists. This aloofness from a movement which has affected the many skeins which compose the tangle of modern life, has resulted in the retention and toleration of a modern counterpart of the medical philosopher of the past, who was wont to play a decidedly foolish part in the sick-room. What that part was the history of medicine has often recorded, and though the methods have been held up to scorn by the few critics whose prowess was great enough to attack so formidable a body of men as were the physicians of that period, the methods, unfortunately, have persisted to this day and the exhibitions of smiling optimism and conversational trivialities in the presence of grave disease have the same stamp of ludicrousness that they had in the good old days.

In criticising this attitude to the suffering patient, we are not desiring a return of "the alarmist physician" but are merely advancing a plea for honesty that shall partake, to a modest extent, of the seriousness of modern intellectualism. Just why the practice of medicine should today be removed from all the currents of thought that are eddying around us, is not clear to us unless explained on the ground that our exuberant and ubiquitous humor must manifest itself in the sick-room, and that we are too indifferent to modernism to give up, even in the presence of the dying, the trite and serio-comic bits of conversation which have come to us as a tradition from probably the most provincial doctors the world has ever seen.

Where this state of things exists one need not be a clever or an astute critic to note that an opposition party will spring up. Now this party consists of men who are so extreme in their views, so serious in their desire to imitate our German confreres, so intent upon occupying the small, high stool which to them is a throne whence the microscope is mastered, that all thought of the psychology of the sick-room is lost sight of. The natural opposition of the patient to a preparation of certain drugs whose vehicle is far from palatable, receives scant attention; in fact, preferences, predilections, idiosyncracies, the many and manifold manifestations of mental distress on the part of the sufferer, are combated, in the "laboratory physician's" mind, by the deep knowledge

his microscope yields him when undiscovered countries are made clear to his ever active but limited mental horizon. The moment of a case with this sort of physician is in ratio to what the microscope whispers to him, and were he to firmly believe with Shakespeare that "the sovereign'st thing on earth was parmaceti for an inward bruise," he would console himself in prescribing so ancient a remedy by the scientific truths which emanate from his favorite instrument.

It can readily be seen that when the physician who still lives in the tradition that spells stereotyped conversational trivialities and irrepressible humor, and the grave exponent of the laboratory meet in the sick-room, tragi-comedies will surely be enacted. There is no common ground for them to meet upon, for they represent the antipodes in the practice of medicine. And though "the laboratory physician" may berate the general practitioner for his lack of the modern scientific spirit, due to ignorance of "the latest in medicine," and the general practitioner may make light of the laboratory physician's serious intent as regards his work in his scientific sanctum, they both fail to grasp the import of modern intellectualism. They both ignore the psychology of the sick and the depressed, the one by acting a part which dramatists from Moliere down to the present time have ridiculed for the public's edification, the other by overlooking everything that might conduce to the patient's comfort, with eyes forever fastened on "the magnifier of small things."

Meantime, the patient may be tossing about in pain, waiting for "bread" and getting a "stone."

To juxtapose two elements in the sick room that are meticulous of each other is a mistake, for the entente cordiale, if it is ever effected, requires too rare a diplomacy. Sometimes it never takes place as was recently instanced in one of our large towns, where a consultation was finally decided upon several hours after the patient's death.

PRAGMATISM.

A new word, or rather a new application of an old word, has just now become the fashion in the world of philosophy. The pages of its journals are studded with the new term and papers upon its elucidation are widely read and written. This new-old term is Pragmatism. Since the Lowell Institute lectures of Professor William James in 1906, and their subsequent publication in book form under the title of Pragmatism, interest has been widely aroused. Two names in this country, James and Dewey, and one in England, Schiller, have been closely identified with the movement. Italy boasts of an active pragmatist, Papini, and an organ devoted to the promulgations of its tenets. The wave has reached even further, and the Germans and the writers of northern Europe are admitting that the new movement is worthy of attention.

It certainly should be characteristic of a liberal profession, using the term in its good old-fashioned significance, to take some notice of so far-reaching an intellectual movement. To the physician who instinctively turns to philosophy as a congenial study for his leisure hours, or to the

one who feels the prime necessity of being somewhat in touch with the more important tendencies in human thought, the term Pragmatism must have a very vital interest. The physician would no doubt belong to the class of amateurs described by James, but it is to be hoped in certain instances he will have at least the amateur's enthusiasm. Pragmatism comes from the Greek word which means action, from which the English word practice and practical are derived.

It was introduced into philosophy by Charles Peirce in 1878, in an article entitled "How to Make Our Ideas Clear." Mr. Peirce, after pointing out that our beliefs are really rules for action, said that to develop a thought meaning we need only determine what conduct it is fitted to produce. The tangible fact at the root of all thought distinctions, however subtle, is that there is no one of them so fine as to consist in anything but a possible difference of practice. This is the principle of Peirce, the principle of Pragmatism. The principle here evolved lay dormant in the literature of philosophy until James, in 1898, brought it forward again in a series of lectures to the philosophical class of the University of California. The time now seemed ripe, the word pragmatism spread and the pragmatic movement is now one of the recognized forces in the world of thought. As Pragmatism presupposes always some tangible effect in act, the movement may well be conceived of as having a very practical bearing upon all human conduct. Perhaps it is the latter tendency which has so much attraction for the thoughtful physician. James puts the pragmatic attitude with his accustomed power of description in this way: "Pragmatism represents a perfectly familiar attitude in philosophy, the Empiricist attitude. A pragmatist turns his back resolutely and once for all upon a lot of inveterate habits dear to professional philosophers. He turns away from abstraction and insufficiency, from verbal solutions, from bad a priori reasons, from fixed principles, closed systems and pretended absolutes and origins. He turns towards concreteness and adequacy, towards facts, towards actions and towards power." The full significance of pragmatic attitude can be in no way better illustrated than by the attitude which a pragmatist would assume towards truth. They would say that truth in our ideas and beliefs means the same thing that it means in science. It means nothing but this; that ideas, which are of themselves but parts of our experience, become true just in so far as they help us to get into satisfactory relation with other parts of our experience. Mr. Schiller has given to this view of truth the name Humanism, and he has written, under Studies in Humanism, some of the various applications of this view to a number of the most vital problems in philosophy. From these brief excerpts an idea of the scope of the new philosophy may be obtained. No one could venture to predict how far the wave might reach, nor to what unlooked for results might be the consequence. It seems to do this, however, it offers to the amateur in philosophy a certain tangible hold on the methods and the results of philosophic thought. It certainly brings philosophy very close to the average daily life of an intelligent human being. It enables anyone who is interested in his own mental life, and who at bottom is not, to get away from the puzzling abstractions of terms and the far away upper strata of the professional, and to come into as close touch as

may be with what to him must be in the long run the most vital fact of existence, that is, his own consciousness. Apart from all other reasons there is this fact, Pragmatism is something of importance and interest to every thinking man, and the physician should see that he is not a total stranger to anything so full of possibilities to his own mental regeneration, as well as that of his patient. The only regrettable thing about this attempted exposition of Pragmatism is the half apologetic attitude which the writer feels he must assume, in having this printed in a medical journal. Medical Philistinism is a reminder and remnant of the day when the medical school aimed to produce only practical physicians, meaning, such a one apparently who could do, and should not think beyond the set limits of a narrow professional life. The practical in this sense, though derived from the same Greek word as pragmatic, savors of none of its broader and more humane significance.

With this apology the above is offered to the readers of this journal with the hope that it may stimulate an interest in philosophy as a whole, or in the attempt to give additional vitality to some of its important truths by Pragmatism.

LITERARY NOTES.

Longmans, Green & Co., have recently published "Pragmatism" by Prof. William James. This work has created a veritable furore in scientific circles on account of its insistence on some of the old ways of thinking. In the mad rush incident to the multitudinous theories of modern philosophy scant, if any, attention was given to the old methods of thought; therefore, their advocacy as presented in Prof. James' work is something really new, and should have an appeal to the thinking student, be he philosopher or physician.

The International Congress of Hygiene and Demography opened in Berlin Monday. Twenty-three countries are represented, including delegates from every continent. Their reports will deal with methods of combating tuberculosis and all forms of contagious diseases; with disinfection, inoculation, and the most recent discoveries concerning the hygienic care of children, working people, soldiers and sailors; the control of schools, dwellings, barracks; ships, railroads, and other public conveyances; food inspection, water supplies, the disposal of sewage, baths, emigration, the surveillance of ports, birth and death rates, midwifery, and sanatoria. Among the papers presented by American delegates are the following: Dr. Harvey W. Wiley, chief of the Bureau of Chemistry at Washington, "Legislation Concerning Foodstuffs;" Dr. Stephen E. Baruch of New York, "Public and Factory Baths;" Dr. Herman M. Biggs of New York, "Conquering Tuberculosis, and the Care of Consumptives;" Dr. Richard Pearson Strong, director of the Government Biological Laboratory at Manila, Philippine Islands, "Preventive Inoculation against Plague and Cholera;" Col. William C. Gorgas, chief of the Sanitary Department of the Panama Canal Zone, "Campaign against Yellow Fever;" and Dr. R. G. Freeman of New York, "Milk Control."

ORIGINAL ARTICLES.

VISION AND SENILITY.

BY GEORGE M. GOULD, M. D., Philadelphia.

Patients every day come to the oculist's office saying, "What is the matter with our eyes nowadays? My father is over 60 and reads without glasses." Or, "Grandfather has got his 'second sight' now, and sees better than he ever did," either miles away, or for reading. The professor taking his Sabbatical year, or the old pensioned teacher of physics or of psychology tells of his "cornea flattening" and of his "second sight,"—and so on. As gently as may be, in order not to hurt any feelings, one has to explain that there is no such a thing as second sight, that the cornea does not flatten, that the vision either for near or distance is not as good in those of 60 or over, as it was when they were younger, that the pride of believing glasses are not necessary for the old is vanity that costs eyesight and life,—and so forth.

Pondering over these things the oculist comes to perceive that there is a most intimate and causal relation of vision and old age, or what is at least the same thing, a too early beginning of old age; that, in truth, the habit and fact of over-prolonged senility is almost wholly due to ocular defects and failures. In the first place the pride of the glassless person of over 50 years of age in his ability to see, is often a childish pride, bearing pathetic witness to the desire to hide from his own mental eyes the very fact of his growing old. It testifies to the unconscious admission of the vital relation of good sight and good health, for good vision is the *sine qua non* of health, activity and youthful feeling. Scientific tests always show that this pride of the old is without basis of fact, and that their vision is in one or both eyes highly subnormal, either for near or for distance, or for both. The most overweening of my patients, the one most contemptuous of "the modern oculist crank," did not, at 70, know that he was blind in one eye (from eyestrain-choroiditis) and had between one and two diopters of astigmatism in the badly damaged fellow-eye. He had lived a life of insanitary, almost insane, torment, fighting against the hateful spectacles. Such as he will not and cannot understand that seeing is largely a psychic fact, a perceptual education, with some aid from the eyeballs, and that the poor little they do see is well supplemented by memory. They can read, what little they do read, with the ocular hints of vision less and less accurate, cunningly guessing at the shapes of letters, words, or rather sentences, reading headlines, and, as regards distant ob-

jects, enormously astute in the guessing; and also as marvelously unsuspecting that the little seen is far more a memory than an ocular photographing. Moreover such as they cannot suspect that the little actually seen, the wretched photograph really focussed on the retina, is done at an absurdly useless expense and waste of ocular functions and powers. It quickly brings on disease of the eyes, and a needlessly lessened visual power,—a shortening up both of visual ability and of the old age which is itself so largely caused by poor vision. Thus even the most seemingly innocent of prides and the most excusable of vanities needs the sobering and normalizing correction of fact and science to eliminate injuries and blunders.

Ubi motus, ibi visus est is a happy epitome of the preponderant role of vision in evolution. All free motility of any but the lowest organisms was dependent upon the preceding and *pari passu* elaboration of the visual organ. Every step of developmental progress has been possible only by the aid of vision and its forerunning instrumentality. When one thinks of it this is self-evident, but neither Darwin nor his followers have spoken of the fact. The exclusion of the unfit has been in the majority of instances the exclusion of the visually unfit, and the survival of the fit has been as largely the survival of the visually fit. It has become a truism of science that "the ontogeny repeats the phylogeny," the individual epitomizes the history of the race, and yet every embryologist knows that the human fertilized ovum shows the construction of the eyes under way by the third week, and by the fifth week the eyes begin to move forward from the side of the head. But it is not until the fifth month that there is any difference of muscular tissue in the fetus. The startlingly significant fact must also be borne in mind that unlike any other organ of the body, the retina and optic nerve are an outgrowth of the brain. The eye is thus part of the brain; the brain comes out to see! Long before there could be self motility therefore, the brain and mind foresaw that the organism could live and move only by means of vision. And how long this seeing is before "quickening," or spontaneous movement! Infinitely greater than that of creating any other organ was the difficulty of forming and upholding the eye. This is first because it must be transparent, and more because it must react to stimuli hundreds of millions of times more slight than, for instance, those of the ear.

The enormity of these difficulties is emphasized and exhibited by the fact that the creator and upholder of the eye has found it impossible to maintain the perfection of the ocular mechanism and function beyond the age of 45 years. With this age his difficulties, always existing before, always only half conquered, become so great that they rapidly interfere with and cripple the entire organismal validity of the human being. Even

in present-day civilization few, very few indeed, of the world's hundreds of millions of inhabitants can get the little help that would prevent this crippling; but before spectacle-lenses were known, presbyopia, cataract, together with conjunctivitis, keratitis, and a dozen other eye-diseases, were cooperating to produce that renunciation of labor and the social functions called old age. The habit of giving up energizing work and useful social functions was established in countless past ages when the eye became unfitted to guide such work. Thus was formed the custom or habit of senility, the renunciation of the youthful and virile offices, and the acceptance of exclusion, of resignation, of waiting for the end. Institutionalism arose and somewhat lessened the hardness of the decree for a few, ("The King is dead, long live the King!"), while religion, parental affection, and advancing civilization united to make it still less bitter. But all modifications, and all forms of disguised pensioning systems altered only slightly the fateful fact. Even now the employes of our railway systems, discharged pensionless because of the age-limit, disappear in a few years—two or three, it is said, on the average—and the death-certificates err or lie in setting down the cause of death. The tremendous rise in the numbers of suicides occurring from 40 to 55 is startlingly significant. Not to be forgotten is the fact that most suicides are unknown, and are willed; they are not instantaneous but slow. "My work is done," "I am laid on the shelf," "of no more use,"—the renunciation of the will to live, the failure to grasp the means of good living—such are the dominant causes of suicide, open or concealed. Therein lies the real tragedy of vital statistics. And the *causa causans* of the uselessness and renunciation has been and still remains the paralysis of opportunity and energy because of the evils, direct and indirect, of bad vision.

What is the first great ocular difficulty which the maker of the eyes had to meet? Plainly to make and keep transparent the ocular structures from the front to the back of the eye, from the skin of the cornea to the last (pigmented) layer of the retina;—transparent as the best glass, they must be, all these highly complex vital tissues,—permeable to the short octave of the incredibly delicate ether-waves called light. There are more than a dozen most cunning devices for shading the retinas and keeping them sensitive to these infinitesimal stimuli. In former ages diseases of the conjunctiva and cornea were vastly more common than now and yet today there are some 50,000 Americans who are blind and mostly because of these difficulties in keeping up transparency. The few that escaped transmitted to us their good fortune and ability to escape. A sigh for the fate of those who did not escape!

But in the past not one of the countless billions could avoid the tragedy of presbyopia, or old-age sight; it overcame many, the hyperopic and as-

tigmatic of high degree, it crippled them all their lives, and sooner or later it choked them to menial tasks or unmerited suffering; and it came upon them most relentlessly at 35 or 40. Those with more normally shaped eyeballs it caught, every one but a few myopes, at 45 or 50, and stopped all handiwork, all the intellectual tasks, all reading and writing, almost all basket and pottery making, weaving, arrow-chipping, shooting, effective fighting, etc. And the few nearsighted were prevented from hunting, games, athletics, etc., upon which uncivilized lives and success so largely depended. No person who has seen even moderately well during active and adult life, can see as well after he or she is 45 and 50 years old. Nature could not make a crystalline lens, or "the accommodational system of the eye" transparent and at the same time perfectly functional beyond the age of 45. This lens must be nourished without the presence of red-blood corpuscles and without any nerve-connections with brain or body. This was the difficulty which was really an impossibility for the biologic mechanic. To that difficulty the effectiveness of all must be more or less subject and limited; and most were absolutely sacrificed to it. It has been one of the controlling factors in establishing "the average length and expectation of life of the insurance and mortality tables. Only a moderate and fair imagination and sympathy is needed to translate it all in terms of personal suffering, sociology, and civilization. It formed the precedent and the sufficient excuse for the custom and habit of recognizing the age of about 50 as that in which "age," "old age," or senility, was full upon the worker. Dependency, at least, had then to be accepted in some form, and to some degree. Despair and renunciation soon followed. The ludicrous ineptitude of Osler's "A man is as old as his arteries" has been exposed by Minot. And could anything, for an amusement-loving scientist, outdo Metchnikoff's uproarious theory of the too great size of the large intestine in man, whence fermentation of the too-long retained food, the fetich of "autotoxemia," and the sour-milk gospel. Sour milk is thus solemnly and literally to prevent old age, and is to take the place of medicine, religion and philosophy, as a world-supporting, death-abolishing God, a divinity of lactic acid, instead of any philosophy or all religions. But Professor Muhlman—these pseudo-scientists are always Professors!—outdoes Professor Metchnikoff, and says that old age is due to the diminution of the surface of the body in proportion to its bulk. The logical result is that the smaller we are, the longer we will live! The Pillars of Hercules have been reached! Minot who smiles audibly at these grins of an expiring pathology, does not suspect, does not even mention the chief cause of old age,—ocular defects and failures—and hastens to argue against the belief that old age is a disease, or due to any disease. He confounds two entirely distinct things,

the anatomic changes of senility and the mental, moral, or dispositional ones. And he also confounds two things which need as emphatic a sundering, the lethal old-age, and the needlessly early assumption of old age. Death none may hope to escape, but its coming is preceded only a brief year or so at most by the organic diseases which directly demand it. The living death which custom has made common, the death of mental and moral energy, the false old age of a score or more of years after 50,—that is a different affair. And that is due almost wholly to visual old age, a kind now easily and wholly obviabie. Herein is the solution of the mystery set forth in these suggestive words: "As the organism rises higher and higher in the scale, old age becomes more and more marked, and in no animal is old age perhaps so marked, certainly in no animal is it more marked than in ourselves."

The crippling of ability, the wrecking of health in the young and in adults caused by astigmatism, hyperopia, and anisometropia, occurs in a large minority of all human beings. The proportion rapidly rises with every grade of civilization, with every step of advance in intellectual progress. The average length of life is shortened by it, the total effectiveness of working life tremendously impaired. Those who nowadays by lenses or by absence of morbid ametropia happily avoid the misfortune, go on to the age of 45; but then comes the fate which none may escape, except possibly a few hundreds in a million of American citizens; appears now presbyopia, or failure of accommodation, added to all the other ocular ills. Even for the vast majority of Americans there is yet no hope, because of the blind bigotry and unhumanity of the ophthalmologists and so-called leaders of the medical profession. Hence the inevitable result, cataract. If loss of accommodation and half-blinding were not in past ages a sufficiently incapacitating blow, the total blindness of cataract was supremely decisive. Not to be forgotten is the fact that in early times cataract was far more common than now. All early medicine was mightily concerned with this sad disease. The dramatic and tragic nature of it riveted attention, and exercised a powerful influence in fixing the emotions upon the further uselessness of living, both in the minds of the sufferers, and in those, usually thoughtless and cruel, who had to support them. The logic was terrible, but it was unanswerable, from either point of view;—in such cases presbyopia had long rendered life of little or no use, and cataract was the death-sentence.

Comment is suggested by the double significance of the word virility. The procreant ability of man is not stopped at 50, or 60, or even at 70 years. Men have become fathers at 80 or even 90. This fact is an illuminating gloss upon the accepted belief that old age, or the supposed period of ineffectiveness and life-renunciation begins at about 50. Make old age

accept the helps it may have, root out the superstitions and customs begotten of failing vision, root in the new growth of belief in an energetic last series of clear-seeing years, and the sad grin of resigned stoicism becomes an amused and benignant smile. One may not run quite so swiftly as formerly, or strike so heavily, but in old age, as well as in young age, all right wisdom and life teach that "the race is not to the swift nor the battle to the strong."

And I gather that, as pertinent to woman, the lesson, despite the seeming negative, holds quite as well. Both the facts and the superstitions of old age were established while women were practically enslaved and did all the labor of life, especially the labor that required good vision, and which was prevented by the disabilities of bad vision coming on at 45 or 50. It is most significant that her sensitive organism, prematurely aged by work, cruelty and suffering, should find the ending of its reproductive ability exactly at the time of the great ocular failure we call presbyopia, or "old-age sight." Freed from overwork, the enslavement, the degradation, the cruelty, one already sees the average length of woman's reproductive life, even of her total life, increasing, and youth chasing adulthood to the last confines of a later and a real old-age. For despite all the foolish persons that ever senilely prated of and encouraged the uselessness of the senile, the man of 45, of 50, of 55, and even 60, is except ocularly and by reason of ocularly-created superstitions, most admirably capable of original and splendid work. He may not be as good an advertiser of himself, may not be as effective a hunter after honors and sinecures as he formerly was, but he is at least ripe for the guiding, and the helping, and the judicial government of progress. Take from the world the discoveries and labors of those over 45, and the youngsters would be having a far less enlightened and happy life. Such flippant upstartism, of course, cannot learn and will not be taught that scientific spectacles, (sneered at as "glassing" and "bespectacling") prevent almost all the evils of eyestrain and ill-health in adult life, absolutely annihilate the evils of presbyopia, and prevent the rise of at least nine-tenths of the cases of cataract. The right correction of ametropia is in truth the most important and revolutionizing need of medicine, and the unrivalled condition of social progress. It will do away with more hospitals, extinguish more suffering, lengthen the term of human life more than any or all solutions of the mysteries so avidly sought in all the laboratories. Scornful of functional pathology, worshipping the grinning ghost of anatomic and experimental pathology, the laboratory "expert" seeks the postmortem table, and makes the dead-tissue slide, while neglected functions and the faraway sources of disease endure and pray for a coming scientist with living emotions, with sympathetic desire to prevent the cadavers from coming to his "dead-house."

For the old-age, however unavoidable before our own generation is now absolutely unnecessary. It was in truth a long-drawn-out, over-prolonged valetudinarianism, a pathetically slow method of dying. It is not the way of logical nature, such lingering over the inevitable. Animals, every one of them must outfight or outrun, must keep eye and foot and perception keen, alert up to the minute of the coming of swift and kind death. So should, and so may, men and women hold intact their plasticity and capability, sure foot and nimble wit, up to the last year of their living. A vast deal of praise and nonsense has been written concerning the gain in mere length of living, of "the increasing duration of human life." But we all know this is mostly mere brag, and does not touch the heart of the matter. It is the quality and kind of life which concerns right-minded folk, not continuance of respiration. "Men have found out," said an astute observer, "Men have found out the art of engrafting old age upon themselves before their time." Dr. Minot has admirably shown that the period of decline of old age, the old age of the body, is not only not rapid, but that it is the period of life in which decline is slowest. Is not this luminous truth a demonstration that with the removal of a single cause of this slowest decline, the actual and necessary old age leading to death, may be magnificently postponed? Nothing could be clearer.

And there comes to recognition the fact I emphasize: this, namely, that the needless old age, the assumed senectitude, is really the period of the now unnecessary decline of mentality,—of psychic aging. But psychic aging is a product of past social customs born of defective and aging vision. The psyche itself is most largely the product, the epitomized results, the composite photograph of an infinite number of past visualizations, of normal and healthy seeings. So the morbid psyche is also largely the concrete effects of morbid seeings. Old age was begun too early because bad seeing stopped the doing and being of young age. The truest, the greatest greatness, gathers with the gathering years, when, to right vision and beneficent doing, is added the mature judgment and the large logic which ripened experience alone can give. Thus every good year added to the used and useful life and opportunity of the elders avails in geometric rather than arithmetic proportion.

It is peculiarly noteworthy that civilization, religion, and sympathy have not cut off the useless old, have not as in savage and animal life, swept them off the board in reckless haste. If a forefeeling of coming relief and cure did not motive the patience, the effect is the same, for the annihilation of needless senility by scientific lenses is now possible. Old age, "the disease of Anno Domini" may henceforth be progressively done away with; it should begin not earlier than 70 or 80 surely, and should be limited to the last year or two of life. Hereafter, let no one ever speak

of an "old gentleman" or an "old lady," if the epithets are not to the taste of the sufferer. Long ago one thus insulted, with indignation blurted out the truth: "There is no such thing, sir, as a *fine old man*!" Was his sarcasm not the speaking of the old-time kind of old age, that which was but the reaping of youthful indiscretions, the harvesting of adult sins, the eating of the stale bread of 50 years of selfishness? Chevreul would not have so answered, even at the age of 100 or over. Instead he wrote: "Que voulez vous que j'écrive sur votre album? Je-vais écrire mon premier principe philosophique, c'est par moi qui l'ai formulé, c'est Malebranche. On doit tendre avec effort à l'infailibilité, sans y prétendre." In the presence of such centenary wit and wisdom one should be ashamed to die even at four score and ten. And he should be much more ashamed to show the faltering insecure step, the nonseeing gaze, the crystallized prejudices, the wait-on-me dispositions of fashionable old age. Of what value several decades of vain renunciations, ignorant wantings, "anecdotalage," sinecure-huntings, duty-evasions, pitiful dependencies, too frequently heretofore called old age? It is no more kind than it is necessary, this old time humoring of those hurrying too conspicuously to assume senility. There was, and there still remains a vanity of senility which at last is but the senility of vanity. The custom may now be done away with of devoting the last twenty or more years of life to useless breathing, futile regrets, empty reminiscences and prolonged dying. Let us pack the whole pother of them into one, and that the last one!

VENEREAL DISEASES.—SHALL THE INNOCENT SUFFER FOR THE GUILTY?

BY ROBERT AMORY, M. D., Boston.

During the last few years there has appeared in literature of the secular press and, also, from the pen of many physicians of high standing as well as in the proceedings of the American Medical Association, the presentation of a very widespread and dangerous condition from the prevalence of venereal and syphilitic contagion from persons who have incurred disease and transmitted these poisons to innocent children and innocent adults.

This condition of things has suggested to medical men collection of data which is most startling to the community.

One of these authors writes: "Venereal morbidity must always remain an unknown and an unknowable quantity."

Neisser—the discoverer of the gonococcus and a distinguished venerealologist of Germany—presented to the Medical Congress assembled at

Brussels several years ago statistics of the prevalence of venereal diseases which are terrifying to contemplate.

The Journal of the American Medical Association (October 20th, 1906), has an article (a paper read by Dr. Prince A. Morrow before the Section on Hygiene and Sanitary Science, June, 1906), on "Publicity as a Factor in Venereal Prophylaxis." Among other comments made in this paper he states: "Venereal diseases are the diseases which above all others are concealed from public observation; both social sentiment and the code of professional ethics have always protected them from exposure. The motive for concealment is emphasized by the element of shame with which they are invested by popular prejudice, from the erroneous idea that they have their exclusive origin in licentious indulgence. In the popular conception they are essentially *les maladies revelatrices*, affording proof positive or presumptive of immoral relations. * * * If venereal diseases were private in the sense of being always limited to the individual who contracts it by voluntary exposure, the case would be different; unfortunately venereal infection from its capacity of expansion, its morbid irradiation through social and family life, its transmission in full virulence to the offspring, and its consequent injury to the productivity and vitality of the race, becomes transformed into a social danger of the greatest magnitude and against which society has the right to protect itself by means of every order. * * *"

"Our system of medical bookkeeping, as exhibited in hospital records, health reports and vital statistics, is not free from misleading entries. A convenient and somewhat elastic medical nomenclature lends itself to this policy of concealment. A vast number of morbid conditions which should be charged to venereal infection are entered under some non-compromising name which does not indicate its real nature. Disease directly caused by gonorrhea, and in which the gonococcus may be identified as the pathogenic agent, are entered in our hospital records as purulent ophthalmia, arthritis, endocarditis, endometritis, salpingitis, peritonitis, etc. Diseases in which syphilis is the essential etiologic factor are entered as tabes, paresis, paralysis, aneurism, etc. These diseases plainly bear the image and superscription of syphilis, but we do not render to Caesar the things that are Caesar's."

"The report of the New York committee of seven disclosed the fact that it is not possible to gain from our hospital records or other sources any accurate statistics of the extent of venereal infection in the City of New York. This report states that: 'We find records of cases, many thousands altogether, in which the sequelae of gonorrhea and the systemic manifestations of syphilis are received and treated in hospitals, but are entered under the names which are not recognized by the laity as indicating a venereal origin.' Thus for example: 'In one of the eye hospitals there are

136 cases entered as purulent ophthalmia, in all of which the gonococcus was identified by bacteriologic examination as the pathogenic factor. In the same hospital there were thirty-eight cases of interstitial keratitis, indubitably of syphilitic origin, but not so indicated on the records, etc.'"

"In private practice the concealment of every source of venereal contagion takes on the peremptory obligation imposed by the precepts of the professional code. It is well known that the health boards, the official representatives of the State, which are charged with the control of all contagious diseases dangerous to the public health, ignore the existence, even, of this class of infections."

The above extracts from Dr. Morrow's paper read at the Boston Convention of the Association, has called attention publicly to the avoidance of entering on hospital records the venereal origin of secondary symptoms by its medical and governing staffs in our cities. The writer learned of the concealment, in one of our large city hospitals for children, of the admission of one or more children afflicted with gonorrhea; apparently, there was no record made of their actual disease on the entrance books; in consequence, the infection was communicated unwittingly to other children admitted without gonorrheal disease. This information was given the writer by a member of the board of trustees five years ago; on further inquiry within the past two months one of the surgical staff of that same hospital informed him that on inquiry he could find no evidence of children having been admitted into this hospital, as shown upon the records, with this venereal infection.

Another innocent cause for the conveyance of syphilitic poison has been recently called to the writer's attention by a prominent member of the Massachusetts judiciary; this case (Mass. Report, Vol. 191, p. 585) was appealed to the Massachusetts Supreme Court January 9, 1906, and reviewed before five justices. "It was an action of tort against a dentist for alleged negligence in treating and cleaning the plaintiff's teeth so that she became infected with syphilis; there was evidence that the disease could be communicated by the contact of syphilitic virus on an instrument with a cut on a person's body, that the defendant in cleansing patient's teeth used a revolving circular metal disk and cut the plaintiff's mouth in three places, that two or three weeks afterward syphilitic sores began to form at the points where the cuts were made, that before this time there was no sign of the disease in the plaintiff or her husband, and that the disease was communicated to her in some way connected with the operation on her teeth."

"There was also evidence that to prevent inoculation it is the habit of dentists to disinfect their instruments by boiling water or otherwise, and that the defendant was in the habit of using such means of disinfection."

"Held, that the question, whether the plaintiff was inoculated with the

disease by contact with the instruments used by defendant, and whether this result was attributable to a want of proper care on his part in regard to cleanliness of the instruments, were for the jury. Exceptions sustained, and verdict for plaintiff with damages."

Every family physician must from his experience meet with many cases where he has witnessed the horrible results of conveying infection to the innocent victims by the lust of man. We must all admit that most of this comes originally from the man and not the woman; also that much of the evil lusts of the flesh are fostered by the cheap theaters and concert halls which the young man haunts and from which he is exposed to sexual temptations, especially when he attends without his parents the unclean shows. The reading of unclean books, especially those of suggested lewd thoughts, by the young exalt his sexual appetite which he seeks to appease by illicit intercourse.

The writer would urge upon every one of your readers to read carefully the following papers, and the discussions by the physicians, before the Section on Hygiene and Sanitary Science of the American Medical Association; these are published in the Journal of the American Medical Association in the numbers for October 8th and 20th and December 22d of 1906. The following is a list of the titles and pages of that year:

Page 1886—The Physical and Evolutionary Basis of Marriage. Bayard Holmes, M. D.

Page 1887—The Guarantee of Safety in the Marriage Contract. A. H. Burr, M. D.

Page 1889—Education as a Factor in the Prevention of Criminal Abortion and Illegitimacy. J. H. Carsten, M. D., H. O. Marcy, M. D.

Page 1891—The Guarantee of Safety in the Marriage Contract. Prof. Duhrssen, of Berlin, Germany.

Page 1891—The Protection of the Innocent. William Lee Howard, M. D., E. L. Keyes, M. D.

Page 1947—Discussion on Symposium on Duty of the Profession to Womankind. By Drs. Hunter, Cook, Butler, Munger, Burr, Carsten, Marcy, Calvin, Robie, Searcy and Keyes.

Page 1244—Publicity as a Factor in Venereal Prophylaxis. Prince A. Morrow, M. D.

Page 1246—The Duty of the Medical Profession to the Public in the Matter of Venereal Diseases, and How to Discharge It. W. J. Herdman, M. D.

Page 1248—The Duty of the State Toward Venereal Diseases in France. T. Tuffier, M. D.

Page 1250—What Shall We Teach the Public Regarding Venereal Diseases. Albert E. Carrier, M. D.

Page 1253—What Shall We Teach the Public Regarding Venereal Diseases? Bransford Lewis, M. D.

The general scope and discussion of these papers covered the following ground of the inquiry, to-wit:

Marriage a custom dependent on both physical and psychic factors.

The effect of venereal diseases in the evolution of monogamic marriage.

The need of the protection of women from marital infection. Consequences of such infection. Legislation for protection.

Education and self-control the cure. Evils of late marriages.

Duty of every man to prove himself pure, sound, physically and mentally, before entering matrimony. Dangers of gonorrhea. What should be demanded.

Discussion on symposium of duty of the medical profession to woman.

Value of publicity. Danger of concealment. Specific methods of publicity.

The truth in regard to venereal diseases. Methods of disseminating knowledge.

Need of education. Copies of circulars approved by State and Provincial Boards of Health of North America. Value of statistics of venereal diseases.

Venereal prophylaxis in France. Educational propaganda. Need of better facilities for treatment.

Early instruction. Statistics. Need of hospital accommodation.

Futility of instruction of public generally. Need of work in the pre-vicious stage. Possibility of success.

A clergyman, acting as a missionary in Boston, called to the attention of the Episcopal Convention in May, 1906, the existence of this general social evil, and asked to have a committee appointed to investigate more fully the actual grounds upon which the medical profession rested their arguments for calling public attention to this dangerous and wide-spread menace to health, life, marital separation and race suicide. The writer was appointed one of that committee and makes no apology for incorporating the opening sentences of its report presented in May, 1907, to the Current Assembly of Massachusetts Episcopal Convention, to-wit:

REPORT OF THE COMMITTEE ON PUBLIC MORALS.

"To the Convention of the Diocese of Massachusetts:—

Your committee were appointed to make inquiry into the prevalence of immorality and its results; to recommend what, if any, measures are advisable to awaken a sense of responsibility among parents, teachers,

physicians and clergymen for the instruction of the young in personal purity; and to recommend any means which may help to diminish corrupting agencies or to build up a healthy antagonism to whatever undermines public morals.

The appointment of this committee was largely due to the statements made in publications of the American Society of Sanitary and Moral Prophylaxis, and in recent discussions of medical associations. As these declared a condition which implied a wide spread of immorality, your committee felt that it was their first duty to learn the facts.

They therefore addressed a circular to a-number of the leading medical authorities in this part of the country, asking their belief as to these facts, and also requesting recommendations as to abating immorality. They have received replies from thirty-seven leading physicians, some of whom are recognized authorities upon these subjects. As these authorities are well nigh unanimous in condemning silence and the resulting ignorance to which in large measure these evils are due, your committee feel it to be their duty to speak plainly.

It is agreed that venereal diseases are very wide spread. Of these diseases, syphilis has always been recognized as highly infectious and dangerous, involving both the guilty and innocent in its consequences. Gonorrhea, however, has been so generally regarded as easily cured and attended by no serious results, that most of the physicians whom we have consulted urge that the recent discovery of its malign effects ought to be widely made known. They say that it is the most widespread of all diseases among the male adult population.

That it has serious consequences upon innocent wives.

That about one-third of all venereal infections in women in the records of private practice are communicated by husbands.

That gonorrheal infection is responsible for nearly one-half of sterile marriages.

That it is as powerful a factor of depopulation as syphilis.

That one-fifth of all cases of blindness is due to gonococcic infection.

That the number of separations and divorces on account of marital infection from venereal disease is much larger than is commonly supposed; and

That these crimes against women are largely due to ignorance.

It would seem from the foregoing resume, gathered from the medical profession throughout this vast country and known to the clerical profession as well, that we have in this era a danger to social life which is far more serious than that of alcoholism and drug intoxication. Both of these last two evils have been combatted by legislative interference, not only by State laws but, also, by congressional statutes which regulate and control interstate commerce; both State and Congress have enacted

laws to preserve public health from contagious disease, from impure food and drugs, and violations of health by faulty sewerage and water supply.

The agitation of a general law to regulate marriage and divorce is another effort to provide for the protection of the community."

We may hope that much good may result from the crusade initiated by the American Society of Sanitary and Moral Prophylaxis in New York City; we should not leave this effort for reform only to this active society; the public must also take up the crusade; churchmen should also enlist active co-operation with society in general by its vast influence to eradicate this live danger to the family surroundings; first of all should family culture protect its members.

Medical journals should join in this crusade, stirring up the reader not only to repair the ravages of disease but, also, to prevent the community from incurring contagion which in social life may be disseminated among innocent wives and their children.

The State should be stirred up by both the medical and the clerical professions to enact stringent laws to prevent inoculation of these diseases from the guilty to the innocent. The fundamental principle inherent throughout the body politic, that no man has the right to take away his life, might here be invoked on the ground that, by common law, as in suicide, it is a crime (mayhem) against the state, as it deprives the commonwealth of one capable of performing military duty because it prevents birth of men and maims men for such duty. In the middle ages the barons claimed that, as their communities could only resist capture by having large bodies of fighting men (whose lives belonged to their suzerain) births should be encouraged to be frequent and families large in order to keep up the armies, and they claimed the lives of all born in their principalities.

But to turn to question of statute laws to regulate health: The Scandinavian nations have required for a number of years that gonorrhea and syphilis should be included among the contagious diseases to be reported by physicians weekly; consequently, these two venereal diseases have decreased in those countries by one-third during the last thirty years since this law was enforced.

In Indiana the last legislature enacted a law that no person who had a transmissible disease (venereal principally) shall be allowed to marry; besides prescribing penalties for infraction of this law licenses were required for marriage; also, the execution of the law was placed in the power of the State Board of Health. This board requires of all applicants for licenses answers to a certain formulary of questions which it has prepared; as these at first were not very exacting, there has been little opposition to the law; the answer to these questions must, under the statute, be certified by an oath; unfortunately, perjury exists, but it

is claimed that perjury is just as frequent in giving court testimony. In one of these applications the young man was asked if he had gonorrhea; to which he replied that he had suffered from an attack but was cured; the license was refused under the law until the man had been examined by a physician and, as the physician reported him still infected, the marriage was prevented. The Indiana law was written by one of the highest judges and is believed to be constitutional.

If tuberculosis, as is now recognized in many of our states to be transmissible by infected persons living in same apartments as the uninfected, is subject to isolated treatment, why should not a similar law be enacted for the disease of gonorrhea, more easily transmissible through the use of cloths and towels in common with infected and uninfected who live in same apartment?

Medical men have, up to the present time, been foremost in presenting to their associates this evil of disseminating the seeds of these vile diseases; the foregoing resume of prominent specialists is a strong witness to the prevalence of wide-spread infection through marriage and personal contact with younger members of families by means of clothing and towels, etc. The writer met, in the course of his practice, a case of a refined married lady who acquired a syphilitic ulcer on her lip in consequence of her husband having kissed her on his return from a three months' trip to Cuba; she was unaware of the cause and fact of the disease, nor did he inform her. This occurred more than twenty-five years ago.

The medical practitioner has the duty, not only to cure diseases, but also, to prevent disease by prophylaxis; it is not too much to expect that the clerical, legal and legislative profession should be pre-eminent in their line and join most earnestly in a crusade to prevent in every way possible, by influence of the church, of enactment of laws and their legal enforcement; social life should invoke the discipline of ostracism to restrain the infected from mingling in society functions. The heads of families should guard their daughters from intimacy with any men suspected of venereal contagion; also, to educate their sons from mingling with depraved women liable to venereal diseases which can in a great measure be prevented by encouraging in many ways amusement and light diversion around the family hearth.

Physicians should point the risk and society should follow along the path and clean up the thorns and thistles therein which, not only scratch and tear the skin, but poison the body and mar the person.

The reader is especially referred to an article in the February (1903) number of the American Journal of Medical Sciences, by Dr. Richard F. Woods, of Philadelphia, on the subject of Vulvovaginitis in the Young, in this article many of these cases were veritable gonorrhea, in which Neisser's gonococci were recognisable in the secretion from the vagina, and at a much later age salpingitis and peritonitis caused death in these cases.

THE VALUE OF EXAMINATION OF THE BLOOD IN THE DIAGNOSIS OF CHRONIC LEAD POISONING.

BY CHARLES SUMNER NEER, M. D., Springfield, Mo.

The purpose of this paper is to emphasize the value of a little used method which is of special interest as it makes it possible to base the diagnosis of plumbism upon the discovery of definite pathological changes.

The recognition of chronic lead poisoning, like the recognition of malaria, is generally easy, but occasionally cases are met with which so closely resemble other diseases that the usual clinical examination may not suffice for an accurate and complete diagnosis. There are few pathological conditions which may present a greater variety of symptoms, or are capable of more puzzling mimicry. At the risk of repeating what is well known let me recall some of the symptoms to which plumbism may give rise, making brief mention of a few of the conditions for which it may be mistaken:

COLIC. This is by far the most common symptom, and may simulate appendicitis, or, according to H. Bernhard, may, in some cases be a cause of that affection. It has been mistaken for cancer of the stomach, the contractions of the pylorus and intestine simulating a tumor, and for gastritis. It may be mistaken for enteritis or may cause a true enteritis. It may imitate hepatic or renal colic or ruptured ectopic pregnancy. (Butler).

ANEMIA. This is often very marked and must be distinguished from the primary anemias and anemia secondary to other causes.

JAUNDICE. Jaundice due to lead, (icterus santurninus), requires differentiation from jaundice of other origin.

PALSY. The paralyzes of lead give ample opportunity for error. They may be localized and of the brachial, anti-brachial, the Aran-Duchenne, perineal, or laryngeal type; or they may be generalized. A form of generalized palsy closely resembling ascending paralysis has been observed, and another form assumes the Aran-Duchenne type. (Osler).

ENCEPHALOPATHY. The cerebral symptoms to which plumbism may give rise suggest at once the great possibilities for mistakes in diagnosis. They include convulsions, lead insanity and coma.

The convulsions are the most common. They may resemble epilepsy in all respects, and may be followed by a true epilepsy. Localized convulsions as of the face or of a single limb are not uncommon.

Mental symptoms of a very marked character sometimes occur. The mental state may be one of maniacal excitement, delirium with hallucinations, or the patient may have trance-like attacks. Headache, in-

somnia, vertigo, pupillary alterations, tremor, dimness of vision, etc., may occur, preceding or in connection with the more marked cerebral symptoms, and a symptom-complex may result which is strongly suggestive of cerebral syphilis. This is particularly true if there is a history of syphilitic infection as in Case I, detailed below.

Retinitis, due to lead poisoning, has been observed, and, in the presence of albuminuria, which is a frequent result of plumbism, it may not be easy to distinguish this from albuminuric retinitis.

Hysterical attacks may be excited by plumbism, especially in females.

The difficulties which coma may offer to diagnosis are evident.

FEVER. A considerable degree of fever may occur in the severer forms of chronic lead poisoning. A febrile form of generalized palsy has been described. It seems probable that in the majority of cases the fever is connected with severe disturbance in the gastro-intestinal tract. These cases, an example of which is found in Case II, are probably not common, and a careful examination of the blood may be of the greatest importance in eliminating malaria, typhoid and other febrile affections.

JOINT SYMPTOMS. It is conceivable that lead arthralgia might be mistaken for joint pains due to other causes. Gouty deposits, particularly in the joints of the great toe, are not uncommon in lead workers.

Considering the practical difficulties which chronic lead poisoning may sometimes offer to diagnosis, it is somewhat surprising that more attention is not given by clinicians to a change in the blood which is all but pathognomonic of that condition. While the anemia of lead has nothing to distinguish it from the varying degrees of secondary anemia due to other causes, the alterations in the red cells are very characteristic. These changes are of two kinds: (1) granular or basophilic degeneration, and (2) polychromatophilia. The former is a degeneration in which the red corpuscles contain very small or rather coarse granules which stain with basic stains. Grawitz first called attention to the value of this sign in 1899. These granules are sometimes found in cancer, pernicious anemia, leukaemia, and in certain septicaemias, but is in lead poisoning that they are found in the greatest number and with the greatest constancy. Frey has confirmed the observation of Grawitz, that they may be the first evidence of saturnine intoxication and recommends that workers in lead have their blood examined occasionally as a prophylactic measure. Frey also found that the presence of lead in the urine is not constant in lead poisoning. The other change, polychromatophilia, is a condition in which the red cell instead of possessing the normal affinity for the acid stains, when treated with a mixture of acid and basic stains, presents tints combining the stains employed. This gives the cell, when eosin and hematoxylin are used, a purplish or even a violet color instead of a pink. This change is observed in lead poisoning with as

great constancy as is granular degeneration, with which it is probably very closely allied. (Sahli). It is, however, often found in other severe anemias. The technic of the blood examination is very easy. Frey recommends, for showing granular degeneration, to dry and fix the smear in absolute alcohol and stain with Loeffler's methylene blue. Wright's stain shows the polychromatophilia splendidly and the granular degeneration fairly well.

My experience with this method is limited to seven cases. These were taken consecutively and granular degeneration and polychromatophilia were found in all. In all these cases the clinical symptoms were rather severe. In two of them, however, they were such that the blood examination was of distinct value in diagnosis, and I have considered them of sufficient interest to be given in detail. A third case in which no blood examination was made, is also given as illustrative of a class of cases in which it might be of great value.

Case I. *Lead encephalopathy and alcoholism simulating cerebral syphilis. Diagnosis decided largely by blood examination.*

Patient. W. S. aet. 30, married, American, was brought to the observation ward of the Saint Louis City Hospital at the request of his wife, who stated that he had become violent, flourished a hatchet and threatened to kill himself.

History. Father of the patient died of tuberculosis. Otherwise family history was unimportant. The patient had used alcoholics since the age of 20, excessively at times. Six years before he had taken a "cure" for the liquor habit. For three months he had been working in a lead smeltery, and had quit only a few days before his admission to the hospital. He gave a fairly clear history of having had syphilis nine years before for which he was treated but a short time. Otherwise his health had been good until the trouble for which he entered the hospital.

Present Trouble. About two weeks before coming to the hospital, while still working in lead, he began to suffer from headache which was worse at night. He also noticed some dimness of vision. He quit the lead works, but continued to drink and several times when slightly under the influence of liquor he manifested unwonted tendencies to violence. It was as a result of one of these that he was brought to the hospital.

Physical Examination. Young man of slender build, fairly well nourished, but rather anemic. Scars of former buboes were found in the inguinal regions, and a brownish scar was to be seen on the left shin. A scarcely discernible blue line was found at the margin of the gums. The abdomen was soft and insensitive, the spleen not palpable and the liver dullness not increased. Examination of the lungs and heart showed nothing abnormal. The pupils were decidedly unequal, but both reacted to

light and in accommodation. There was no paralysis of any kind. The reflexes were present and of average strength, and there was no disturbance of gait, station or speech. The urine was acid, had a specific gravity of 1004 and showed no albumin sugar or casts.

With the evidences of the previous acquisition of syphilis, the history of nocturnal headache, visual disturbance, and mental symptoms, and the presence of inequality of the pupils, it became a matter of some difficulty and of much importance to say whether the patient was suffering from cerebral syphilis, or to what extent, if any, his symptoms could be attributed to lead encephalopathy. The influence of alcoholism was of course to be taken into consideration.

The blood was examined and granular degeneration polychromatophilia of the red cells, and a few normoblasts were found. This finding, indicating as it did, a severe degree of saturnine intoxication, made it very probable that we had to deal with a lead encephalopathy aggravated by alcoholism. The man was rational and well behaved during his stay in the hospital; the headache improved, the pupillary difference disappeared and within a few days his wife decided to take him home.

Case II. Lead colic with attacks of fever. Blood examination gave evidence of severe lead intoxication, and was of assistance in eliminating malaria, etc.

Patient. R. H. Col. aet. 32, single, American, came to the City Hospital in December, 1906, with colicky pains in the abdomen and severe constipation.

History. His mother died of pulmonary tuberculosis, but the family history was otherwise of no importance. He had been working for about five months in a lead smelter, constantly inhaling the fumes of the metal. He drank two or three glasses of beer daily. He had had the usual diseases of childhood and gonorrhea and chancroids, but no other illness.

Present Trouble. He was obliged to quit work about a week before entering the hospital, because of severe pain in the belly and general weakness.

Physical Examination. Well developed, but rather anemic mulatto. The conjunctivæ were slightly yellow. The tongue was heavily coated and a very marked lead line could be seen on the gums. The abdomen was soft and but very slightly tender to pressure. His spleen was not palpable, and the liver dullness not increased. The respiratory, circulatory, and nervous systems were negative. The urine showed nothing pathological, except a few hyaline casts at one examination.

The day after his entrance he had a slight rise of temperature and two days later, December 13th, after slight chilliness, his temperature went to 103.8 F. and his pulse 130, where they remained with little variation

for two days. The patient appeared quite sick during this time, though he had scarcely any pain. Saliva dribbled constantly, a phenomenon in accord with the observation of Musser that "in the more advanced cases (of plumbism) there is some salivation."

Malaria was of course suspected, but a very careful blood examination by the late Doctor P. J. Weber and myself revealed no malarial organisms. It did, however, show polychromatophilia and granular degeneration of the red cells and a fairly large number of nucleated reds, and some degree of poikilocytosis. There was only a slight leucocytosis and 3,400,000 red cells. The Widal and Diazo tests were negative. The temperature on the 16th reached normal and remained so for several days without quinine. The patient stayed in the hospital several weeks and had several other slighter exacerbations of fever which I feel sure were not due to malaria.

The profound alterations shown by the red cells, the extreme weakness, marked constipation and other evidences of an unusual degree of lead poisoning, made it seem very probable that the fever was in some way the result of that condition.

In such cases as the following an examination of the blood might be of the greatest value in establishing the cause of the convulsive seizures. "In fits developing in the adult the possibility of lead poisoning should always be suspected." (Osler).

Case III. *Epileptiform seizures in a man of 47. History of working in lead for 20 years and of indulgence in alcohol.*

Patient. F. H. aet. 47, American, married, was brought to the hospital from jail where he had had a fit. He was under arrest and as a result of a quarrel.

History. Father died at 83. Mother still living and healthy at 65. There was no history of nervous diseases in the family. Patient had been a painter for over 20 years, and had been accustomed to drinking a few glasses of beer daily, going on occasional sprees. He used tobacco rather to excess. His previous health had been good except for the usual diseases of childhood, and an attack of malaria. No history of syphilis was obtained. Four years before he began to have periodical attacks of pain in the abdomen and cramps in the limbs. These occurred at irregular intervals and were worse after excessive indulgence in alcohol. He was troubled frequently with headache. Constipation was not a prominent symptom. About three years before he had an epileptiform attack and since then two or three other similar fits had occurred at intervals of several months.

Present Trouble. While in jail he had an attack of convulsions followed by unconsciousness, for which he was brought to the hospital. When he entered he showed considerable nervousness and shook as

though he might be having a chill. The temperature was elevated slightly above the normal.

Physical Examination. Well built, well nourished man of sandy complexion. The mucous membranes were pale. The skin was clear and there was no oedema. The tongue was coated, the teeth poorly kept, and lead lines were to be seen along the margins of the gums. The abdomen was soft and not tender, and the spleen not palpable. Examination of the lungs showed nothing abnormal. Apex beat was in the usual position. At the first examination a soft systolic apical murmur was heard, but this soon disappeared. The urine showed a trace of albumin but no casts. The pupils were equal and reacted to light and accommodation. The reflexes were present and of average strength, and there was no paralysis.

After entering the hospital he had a typical epileptic seizure preceded by a cry and followed by unconsciousness.

In this case no examination of the blood was made, and by this omission we failed to make use of a means by which one might arrive at a more definite idea as to how far the convulsions were to be attributed to lead and how far to alcohol.

Another group of cases to which this method of examination may be applied includes those in which plumbism develops from unusual or obscure causes. For example Braatz has collected records of six cases in which lead projectiles encapsulated in the tissues gave rise to symptoms of lead poisoning.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF
JESSE S. MYER, M. D.

A CASE OF PRIMARY CARCINOMA OF THE APPENDIX.—Grunbaum (*Berliner Klin. Wochen.*, No. 32, 1907).—Lauder reported a case of primary carcinoma of the appendix in 1906, in a patient operated upon for myoma, and he called attention to the importance of investigating the appendix in every laparotomy and recommends that any case in which macroscopical changes are seen, the appendix should be removed.

The author reports a case operated upon for pyosalpinx in which the appendix showed primary carcinoma. The proximal end of the appendix was perfectly normal, while the distal end was about the size of a bean, thick and hard. It proved to be a solid new growth, the microscopical examination of which revealed carcinoma simplex. The patient was 19 years of age, gave a definite history of an attack of appendicitis four weeks before the operation. At the time of the operation, the physical findings were those of a double-sided pyosalpinx. The author has been able to find seventy cases of carcinoma of the appendix recorded in the literature, of which Lubawsch reports one in a boy 17 years of age.

ABSENCE AND MARKED DIMINUTION OF THE HYDROCHLORIC ACID OF THE GASTRIC CONTENTS IN CANCER INVOLVING ORGANS OTHER THAN THE STOMACH.—Friedenwald and Rosenthal (*New York Med. Jour.*, August 24, 1907).—The authors conducted a series of investigations with a view to determining the relationship of the hydrochloric acid of the gastric contents to carcinoma in portions of the body other than the stomach. Of the twenty-nine cases nine were cases of cancer of the breast, five cancer of the uterus, seven cancer of the rectum, two cancer of the tongue, four cancer of the face, one cancer of the intestines and one cancer of the pancreas. In all of the cases an Ewald test breakfast was given and removed at the end of an hour, and the gastric contents examined. From one to four examinations were made in each case. Nine cases showed a low total acidity with an entire absence of free hydrochloric acid; ten showed a low total acidity with a marked diminution of free hydrochloric acid, and the remaining ten a normal acidity with a normal percentage of free hydrochloric acid. It was found that in nineteen of the twenty-nine cases there was either an entire absence or diminution of free hydrochloric acid. In ten of these cases, examinations of the gastric contents were made after the total extirpation of the growth and in not one of these cases did the free hydrochloric acid return after it had disappeared, and in those instances in which it was diminished before the operation, it remained so afterwards.

The authors call attention to the fact, pointed out by Moore, that any doubtful cases of cancer, no matter what the situation of the growth,

the absence or diminution of the hydrochloric acid may at times be a valuable aid in diagnosis.

SYPHILIS OF THE HEART AND ITS EARLY DIAGNOSIS.—Herzog (*Berlin Klin. Wochen.*, No. 32, 1907).—The author believes that too little stress is laid upon the luetic origin of certain cardiac disturbances, and calls attention to a train of symptoms occurring suddenly in young people, which he thinks almost invariably points to lues and that these cases should be given an anti-luetic treatment. The symptoms are those of pain in the cardiac regions, often radiating, difficulty in breathing, high blood pressure, Musset's symptom, accentuation of the second aortic sound, increased blood pressure in the radial, a wide, tumultuous apex beat. These symptoms point to disease of the aorta, or coronary arteries. Every severe case of angina pectoris in young people or those of middle age, as well as moderate symptoms of precordial pressure, and fear, in those who were previously well, should always prompt one to think about the possibility of lues. These cases often yield to anti-luetic treatment, as is definitely shown by the cases he reported.

IS OPIUM USEFUL OR INJURIOUS IN ACUTE PERITYPHLITIS.—Pel (*Berliner Klinische Wochen.*, No. 32, 1907).—The author discusses the advisability of using opium in the treatment of perityphlitis and comes to the conclusion that the rational use of opium, together with bed rest, strict diet, applications of ice and the avoidance of laxatives, bring about a favorable result in about 90 per cent of the cases. He considers the use of laxatives in these cases entirely contraindicated, and the use of opium absolutely called for.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF
CARL FISCH, M. D.

THE USE OF AMMONIUM OXALATE IN BLOOD CULTURE TECHNIQUE.—Epstein (*Amer. Jour. of the Med. Sc.*, Sept. 1907).—Epstein has added to the methods of the early establishment of typhoid and other septicemic infections, a very convenient procedure that allows of a quick and reliable demonstration of the typhoid bacilli in the blood in the first days of the disease. It consists in the dilution of the blood with 10 c.c. of a solution composed as follows: ammonium oxalate, 2 grammes; sodium chloride, 6 grammes; aqua distill. 1000. The solution prevents coagulation and therefore the bactericidal effect of the serum. The life of the bacteria is not endangered by it, and cultures from the diluted blood can be made in the ordinary ways. The advantage of the method is its great facility and the slight inconvenience to the patient. The surprising side of the problem is that the author needs a large amount of blood (10 c.c.); this, with the preparation for obtaining it, proved the greatest part of the inconvenience. This may be neglected in doubtful cases of

septicemia, but not in typhoid where a much smaller amount of blood from the fourth to the twelfth days always contains bacilli in sufficient number to be easily demonstrated by culture, for classical typhoid as well as the abortive and light cases. One c.c. of the blood is sufficient for the diagnosis and is easily obtained by puncture of a finger or auricle. The number present in such an amount may be too small for demonstration when diluted with 10 c.c. of the author's solution, but is easily demonstrated by using as a diluting medium sterilized ox-gall. This not only prevents coagulation of the blood without bactericidal effect of the bacilli, but at the same time allows the latter to multiply and be made more easily accessible to cultural demonstration. The inconvenience connected with the procedure is not greater than that of every ordinary blood examination. The method that is now used widely in Germany for this purpose is reliable in the great majority of cases. The advantage of the German method is that the ox-gall dilution of the blood can be sent almost any distance for analysis. This certainly does not obtain for an oxalate of ammonium solution. Epstein's method will be a great facility on occasions where little opportunity exists for better and easier procedure, and must be regarded as a means to establish an early diagnosis of blood infections.

THE CONCEPTION OF MESENCHYM AND THE DOCTRINE OF THE SPECIFICITY OF THE GERMINAL LAYERS.—Voit (*Deutsch. Med. Woch.*, 1907, No. 30).—Voit reviewed the gradual change that has occurred during the last few years in the two embryologic conceptions named in the title. Mesenchym was the name of all cell masses lying between the two epithelial germinal layers and was introduced by the Hertwigs. The general opinion was that in vertebrates this mesenchym was derived from various portions of the middle layer (the mesoblast). All organs originating in it were thought to be its products. Late investigation, however, have conclusively demonstrated that the two epidermic layers can take part in the function of the formation of the mesenchym, especially the ectoderm, so that a number of structures and organs previously attributed to the mesoderm are really ectodermic or entodermic in origin. Kastschenko and Goronowisch showed the derivation of certain cranial structures from the ectoderm in vertebrate embryos, and Kupffer, Dohrn and others found that ectodermal mesenchym formed the cartilages of the visceral bones of many vertebrates. The assertion of Klaatsch that the scleroblasts, the formative cells of bones and teeth, were of ectodermic origin, and contradicted by some observers, has lately been reaffirmed by Szily in Voit's laboratory for a great number of ossifications of the skin of fishes that arose from osteoblasts formed by the ectoderm. Maurer and Pletterer claim, as the result of their investigations, that a large portion of the cutis of the skin arises from the basal cells of the ectoderm. These observations, however, for the present have not been verified.

It is certain, nevertheless, that in the future the mesenchym cannot be considered only as a product of the entoderm and that all structures and organs arising from the mesenchym cannot be made one homogenous group. The name mesenchym today represents only a histologic conception. In the development of the organs from each of the germinal layers two different procedures can obtain. If by folding, or bud forma-

tion from the epithelial layer, an organ is developed, its origin from the respective layer is easily demonstrated. The origin of most of the organs thus developed is today finally established. In other organs the formation is different and consists in a separation of the cells from each other, so that they have a period of mesenchymal life. This obtains not only for mesoblastic layers, but also for ecto- and entoderm. In this way the mesenchym fractions arise from different origins, for their very mesenchymatic character cannot be differentiated any more, so that it is difficult in these cases always to lay hand on the germinal layer that gave rise to the mesenchym formation. Only where the different portions of mesenchym retain for some time their differential characters can certainly be obtained. Some cases in which success was obtained are in part cited in the beginning of this review. It will be necessary by future investigations to determine the origin of any of the mesenchymal group of structures and organs. It is very important that the fact has been demonstrated that uniform tissues can arise from two different germinal layers. Thus the cartilaginous structures are partly mesodermal, partly ectodermal; for the osseous tissue the same condition has been made almost certain. More numerous are the observations on the origin of smooth and striated muscle fibres from ectoderm as well as from mesoderm. This was long known for the smooth muscle cells of the sudatory and sebaceous glands; some splendid researches have lately shown the same for the muscles of the eyes of vertebrates, and for muscles in many avertebrate animals.

The doctrine of the specificity of the germinal layers must be revised. The specificity of tissues and the specificity for organs must be kept apart. The idea that a certain tissue can always arise only from one germinal layer must be abandoned. The same does not obtain for the specificity of organs. In view of comparative anatomic problems the proper valuation of the various organs will be the result of further investigations. For pathology it will result in valuable knowledge about the character of tumors and other new formations, making their arrangement as to their genetic character dependent upon the knowledge of the developmental origin or composition of the tissue or organ in which they are located.

THE NATURE OF MALIGNANT TUMORS.—E. V. Dungern and R. Werner. Leipzig, 1907.

V. Dungern's and R. Werner's book brings the most lucid and comprehensive critical review of all of the facts as yet established in our knowledge of tumors, considering them mainly from their relation to the understanding of the nature and origin of malignant tumors. The book is not only a critical review, but represents at the same time the original views of the authors, many new thoughts and the conclusions from many experiments. Most interesting of these are the ones demonstrating the effects of various stimuli on cells, causing various biologic and even morphologic changes of their character. The teachings of Weigert that proliferation of tissue is produced by stimuli doing away with the physiologically present capacity of the cells of inhibition of growth, have been brought nearer to our understanding by their experiments, and built into a theory that not only explains the normal growth, but also

that proliferation occurring after the application of temporary or continuous stimuli seems to be now in reach of our experimental methods. V. Dungern maintains that the return to normal inhibiting capacity occurs, too, in normal cells, if transplanted in heterogeneous tissue. The separation from normal connections alone, as Ribbert emphasizes, can never produce an essential change in the character of the growth of these cells. Such a change can only be produced by the alteration of the reacting capacity of the cells themselves. We are, therefore, compelled to consider the normal reactive capacity of cells on external stimuli, to which the stimuli between the different cells themselves must be added, as the most important factor of growth.

According to the authors the rapid growth and proliferation of the cells of malignant tumors may be due to the fact that their inhibiting function either is impaired or altogether destroyed, and that at the same time the cell has lost its capacity of restitution of the lost function. This idea is in full accord with the results of Ehrlich's work on mouse-carcinomata and with the biologic qualities of other rapidly growing tumors. The authors deny that there is a similarity between tumor cells and embryonal cells; they assert that both forms of cells behave absolutely differently with regard to stimuli to growth, a view that is also announced by Hertwig.

The inflammatory processes in the peripheral regions of cancers are considered simply as reaction of the surrounding connective tissue and not as a factor introductory to the formation or growth of a tumor.

In regard to the immunity phenomena discovered and interpreted by Ehrlich by the assumption of an atreptic immunity, the authors are reluctant and look at them in a different way. The details of their arguments cannot be entered into here.

In the last two chapters of the book, the authors deal with the known theories and opinions about origin and growth of tumors. They insist that all explanations, not figuring with the biologic change of the tumor cells, like those of Cohnheim, Ribbert, etc., are unsatisfactory. The work seems to have shown for the first time in which way these biologic changes from normal to tumor cells can be produced.

As to the etiology of tumors the authors admit that it can be different in different tumors. The changes in the cells may be due in some cases to embryonal malformations, but we have no certain knowledge about this point. The most important quality of malignant cells, the absence of restitutional power for the decreased or absent inhibiting function of the cell, in their opinion, can be more exactly demonstrated. Their experiments demonstrate that even in normal cells artificially a decrease of this restitutional capacity can be achieved if a rather intense stimulus, without allowing a time of recuperation, is applied at short intervals or with combining different stimuli. Therefore it is easy to imagine that combinations of external stimuli exist which either act on the inhibitive factor more intensely than on the others, or are specific for them. In this light a stimulus exerted by micro-organisms can not be *a priori* excluded, although our experiences seem to contradict such a possibility.

Dungern's and Werner's book when read at first appears as an original and beautiful dream of logical minds highly developed. Dungern is admired in his other eminently important works for this absolutely logical

trend of his investigations which have contributed facts of fundamental importance to biologic knowledge. That it is not a dream, but the logical consideration of his experimental work on biologic changes of cells that is detailed in the book, is the point that calls for thorough deliberation and for the direction of the work of others in the same line. The authors' ideas are in line with thoughts that for the last twenty years have become more and more universal about the question of the role of the cell and the consideration of the complex organism. Are they really the individuals composing the latter or not; rather simply the single parts of a complex living structure, each one formed to serve a special purpose necessary for the existence of a complex whole?

DIAGNOSIS.

IN CHARGE OF
ALBERT E. TAUSSIG, M. D.

LEUCOCYTOSIS IN APPENDICITIS.—Kothe (*Ztschr. f. Chir.*, 1907, No. 4-6).—While a moderately high leucocytosis, temperature and pulse speak for a mild type of appendicitis, a rapid increase of these three factors has a more serious meaning. Any marked disproportion between them is still more significant. Thus a high leucocyte count (30,000 and above) is always a sign of severe infection, but, inasmuch as it indicates a sufficient power of reaction on the part of the organism, still allows a favorable prognosis. Where, however, the leucocytosis is disproportionately low, an extremely severe infection with poor recuperative power should be feared. If the leucocytosis persists after operation, or if, after a temporary fall, it again rises, pus is still present somewhere.

EXTREME LEUCOCYTOSIS IN SEVERE INFECTIONS.—Hirschfeld and Kothe (*Deutsch. med. Wochenschr.*, 1907, No. 3).—The writers report ten cases of severe infection, chiefly peritonitis, in which the leucocyte count exceeded 60,000. All but three ended fatally. One case of appendicitis is especially interesting. In spite of early operation the leucocyte count steadily rose until it reached 190,000. The blood picture more and more took on the character of a myelogenous leucemia, there being over 7 per cent of myelocytes. The autopsy showed an absence of peritonitis. Evidently the toxins produced by the infection had so injured the bone marrow as to give rise to a leucemic blood. The case is probably unique.

EYE SYMPTOMS IN MENINGITIS.—Ballantyne (*Brit. Med. Jour.*, 1907, No. 2430).—Conjunctival hemorrhages and herpes of the eyelids are of diagnostic value in meningitis, since they do not occur in other infectious diseases. Conjunctivitis is an early symptom of meningococcus meningitis and is absent in meningitis due to other micro-organisms. Motor paralysis, optic neuritis and interference with vision, in the absence of

ophthalmoscopic changes, point to tuberculosis meningitis, whereas spasmodic and dissociated movements of the eye speak for epidemic cerebrospinal meningitis.

A NEW TEST FOR TUBERCULOUS PUS.—Mueller (*Centralbl. f. inn. Med.*, 1907, No. 12).—Hitherto the Mueller-Jochmann method has been our only means of distinguishing macroscopically between tuberculous and non-tuberculous pus. When a trace of the pus is placed on some sterile coagulated blood-serum and the latter put into the incubator, no change takes place if the pus is tuberculous. Pus due to the ordinary pyogenic bacteria, on the other hand, will form a small cup-shaped depression in the culture medium. This is due to the fact that ordinary pus contains a proteolytic ferment that can digest the blood-serum, whereas this ferment is lacking in purely tuberculous pus. Mueller has succeeded in greatly simplifying this test. A drop of the pus is allowed to fall into a small vessel containing some Millon's reagent. Ordinary pus forms a little lump that soon disintegrates and colors the liquid bright red. Tuberculous pus, on the other hand, forms a tough skin on the surface of the fluid, which, if pushed down, takes on a globular shape. It is not dissolved and does not color the fluid. The explanation of this phenomenon is the same as that of the older test. Tuberculous pus contains chiefly albuminous bodies that form a firm coagulum with Millon's reagent. The proteolytic ferment in ordinary pus, however, digests its own proteids with the formation of albumoses and the like. These diffuse into the Millon's reagent, disintegrating the coagulum and giving rise to the characteristic red color.

THE INTERPRETATION OF THE DEGREE OF GASTRIC ACIDITY.—Prym (*Deutsch. Arch. f. klin. Med.*, 1907, Nos. 3-4).—As the contents of the stomach tend to arrange themselves in layers of varying consistency and acidity, the expressing of a portion of the gastric contents may give rise to utterly false conclusions. This fact renders the use of Sahli's soup test-meal, as well as the method of Mathieu-Remond, illogical and useless. The ordinary Ewald test-breakfast gives trustworthy results only if the entire gastric contents are expressed, but remains our most useful method if this precaution is observed.

MACROSCOPIC EXAMINATION OF SPUTUM.—Goodman (*Jour. A. M. A.*, 1907, No. 26).—Goodman places the sputum in the inverted lid of a Petri dish. The dish itself is then placed bottom downwards into the lid and moderate pressure exerted. The sputum spreads out evenly, does not readily escape from between the glass surfaces and can be conveniently examined against a dark background.

DIAGNOSIS OF UROGENITAL TUBERCULOSIS.—Rolly (*Muench. med. Wochenschr.*, 1907, No. 31).—The writer points out that tuberculosis of the urogenital tract is much more common than is generally supposed, and that in incipient cases the diagnosis can often only be made by means of the demonstration of tubercle bacilli in the urine. As the re-

sult of considerable experience he is certain that we are not able, by means of any of our methods of staining and decolorizing, to distinguish between tubercle bacilli and those belonging to the group of the smegma bacillus. Cultural methods are valueless. The early diagnosis of urogenital tuberculosis is only possible by means of the injection into guinea pigs of the urinary sediment.

BRONCHOPHONY OF THE WHISPERING VOICE.—Masing (*Beitr. z. Klin. d. Tuberk.*, 1907, No. 4).—The earliest sign of apical tuberculosis is a bronchophony that can be elicited when the patient is made to whisper. Later in the disease this phenomenon may vanish, but reappears when recovery is nearly complete. Its disappearance then marks the final return to health.

A QUANTITATIVE METHOD OF ESTIMATING PEPSIN.—Liebman (*Abstr. in Muench. med. Wochenschr.*, 1907, No. 31).—The writer uses an emulsion of coagulated albumin. This forms a milky fluid, that gradually becomes nearly as clear as water under the influence of hydrochloric acid and pepsin. The degree of turbidity still present after the gastric contents have acted upon the emulsion for a definite time is a good measure of the peptic activity. As a standard of comparison he uses solutions of known strength of Armour's pepsin.

THERAPEUTICS.

IN CHARGE OF

WILLIAM ENGELBACH, M. D.

DIPHTHERIA ANTITOXIN IN HAY FEVER AND ASTHMA.—Reuter (*Proceedings of the Oregon State Medical Association*).—The author used antitoxin in sixty cases of hay fever and asthma in repeated doses of 2,000 to 3,000 units. Fifty-one patients were cured; fifteen cases caused by diseases of the heart, kidney or liver, and tuberculosis, were not benefited; four other cases were only temporarily relieved. Smith used antitoxin in several cases and believed that 60 per cent of asthmatics can be benefited. He believes that when failure occurs with this treatment it is due to emphysema and other destructive processes of the lung. Gillespie reports good results in two cases. Pierce used it in twelve cases with more or less success. He thought most relief was gained in neurotic cases of asthma with anemia.

DIET IN KIDNEY AFFECTIONS.—Hanssen (*Nordiskt Medicinskt Arkiv.*, Stockholm, XXXIX., No. 4; *Ref. Jour. A. M. A.*, XLIX., No. 8).—Hanssen tabulates the findings in regard to the metabolism of a number of persons on different diets. They show that the amount of solids eliminated in the urine is as large on a strict milk diet as on a meat diet. The demands on the kidneys are thus as high on a milk diet

as when meat is ingested. Fats and carbohydrates, on the contrary, made far less demands on the kidneys, carbohydrates less than the fats. He confirms the reliability of the "variability test" to determine the functional capacity of the kidneys. His conclusions are that a predominant or exclusive diet of carbohydrates with a little fat is indicated in all cases in which the functional capacity of the kidneys is reduced to or below the limits of normal sufficiency. Milk and meat, providing the same amount of calories, cause elimination through the kidneys of about the same amount of molecules, while materially smaller amounts of solid elements are eliminated through the kidneys on a diet of carbohydrates with a little fat. He regards a maximal specific gravity of 1.014 or 1.015 under the "variability test" of the urine as an indication that the limits of sufficiency of the kidneys have been reached, and that meat and milk should be restricted. If the specific gravity rises higher than 1.013 or 1.014, or there are signs of retention, then meat and milk should be entirely or almost entirely suppressed. In case of uremia nothing should be allowed but gruels with milk sugar. This takes the place of milk in regard to diuretic action.

POTASSIUM PERMANGANATE IN THE TREATMENT OF SNAKE BITES.—Diesing (*Archiv. für Schiffs und Tropen-Hygiene*, Vol. XI., No. 11, 1907).—The author has used permanganate successfully in the following manner: As soon as possible a tourniquet is placed above the bite, and potassium permanganate (about one to two cubic centimeters of a 1 per cent solution) is then injected subcutaneously around the wound, entirely encircling it. The poison, which has not as yet been absorbed, is thus oxidized and made harmless. Any general symptoms which may already have set in are treated in the usual way with whisky, etc. In certain regions where venomous snakes abound many of the inhabitants habitually carry vials containing a solution of potassium permanganate and use it in the way just described.

CASE OF CEREBROSPINAL MENINGITIS, ISOLATION OF THE SPECIFIC ORGANISM, PREPARATION OF A VACCINE, RECOVERY.—Rundle, Mottram, and Williams (*Lancet*, July 27, 1907).—This article describes a remarkable cure of a patient with cerebrospinal meningitis by vaccination with a serum produced by inoculating vaccine. This was made as follows: A 24-hour-old culture was inoculated into sterile normal saline solution and placed in a water bath at 60 deg. C. for half an hour; nasgar tubes were inoculated from it and incubated overnight to test sterility. The number of cocci contained was estimated by mixing known volumes of washed normal blood and vaccine; these were then diluted with normal saline solution, films prepared at once and stained by Leishman's method. The number of organisms present was counted against the red blood corpuscles. The vaccine was freshly prepared for each of the first four doses; the fifth had been made seven days before use. No local reaction was observed after any of the injections. The patient, a male child aged 6 months, came under treatment at a time when the conditions justified an unfavorable prognosis. The apyrexia follow-

ing the first injection of the vaccine recurred after subsequent injections. A rapid and complete recovery without definite relapses or involvement of special senses was the final result.

MORPHIN AND THE ALIMENTARY CANAL.—Magnus (*Jour. A. M. A.*, Vol. XLIX., No. 9, Page 777).—The influence of morphin on the motor function of the gastrointestinal tract has long been a disputed point. In the human subject, the effect of morphin is usually seen in constipation, although in the non-habituated, as well as in the dog, the cat and the rabbit, diarrhea may be provoked. According to Nothnagel, this result is brought about by the action of the drug on a spinal center, small doses stimulating the inhibitory mechanism and large doses paralyzing it. Other writers contend that the morphin acts directly on the intestinal wall, while still others believe that the action is partly central and partly peripheral. Several observers have investigated the influence of morphin on the action of the stomach. Batelli reports that the gastric movements are at first stimulated and later inhibited. Hirsch, who studied the gastric movements of a dog through a duodenal fistula, states that the evacuation of the stomach is delayed by a spasmodic contraction of the pylorus. Riegel has shown that morphin produces hypersecretion and hyperchlorhydria. The most recent work on this subject may be found in the investigations of Magnus, who, while he has not succeeded in simplifying the problem, has demonstrated certain facts which should help to harmonize much of the apparently contradictory evidence now before us. The first step in the work of Magnus was to test the validity of Nothnagel's theory. To accomplish this, he operated on cats, carefully dividing the nerve plexuses about the celiac axis and superior mesenteric vessels from the solar ganglia and the hypogastric, the inferior mesenteric and the small ascending colic branches from the mesenteric ganglia, thus practically cutting off the sympathetic nerve supply of the stomach and intestine. Before proceeding with the experiment he allowed a period of at least seven days to elapse, in which time he was able to demonstrate a degeneration of the peripheral portion of the cut nerves. In cats thus treated he was able to control an artificially induced diarrhea with as little morphin as had been required for the same cats before the operation, thus proving that the sympathetic system is not a necessary factor in this action of morphin. In his further studies on the nature of the changes brought about by morphin, Magnus made use of Cannon's method of studying the movements of the gastrointestinal tract. Cats were fed with twenty-five centimeters of potato gruel, containing five grams of bismuth, and were then observed by means of a fluoroscope. In the normal cat the entire stomach could be outlined by the shadow of the bismuth, and in the course of about fifteen minutes portions of the contents were seen to be rhythmically forced into the duodenum. In cats which had previously received an injection of morphin the picture was very different. In most cases, a certain amount of the food remained in the lower part of the esophagus for some time, but the most constant occurrence was a stasis of the food in the fundus of the stomach. When the morphin was administered after the stomach was full, the organ was seen to be divided into two parts by a spasmodic contraction of that circular bundle of muscle fibers known as the sphinc-

ter antri pylorici. That portion of the food which was shut off in the fundus by the sphincter remained there for a number of hours, while that which had already passed the sphincter went on undisturbed into the duodenum. Further experiments with a dog, in which a duodenal fistula had been established, showed that the time intervening between the entrance of food into the stomach and its passage into the duodenum was greatly lengthened by the influence of morphin, and that it required much more time for the stomach to empty itself, even after peristalsis had been re-established. His observations on the small intestine, both by means of the fluoroscope and by direct observation of the isolated gut, showed a stimulating action of morphin in moderate amounts, while very large doses slowed or stopped the peristaltic movements. This he attributed to the action of the drug on the plexus of Auerbach. While the passage of the chyme through the small intestine was accomplished with more rapidity than under normal circumstances, its ultimate arrival at the colon was much delayed by its retention in the stomach. Magnus could demonstrate little or no influence of morphin on the movements of the large intestine. These experiments suggest that the constipation caused by morphin is the result of the retention of food in the stomach, and this may be due, at least partly, to the hypersecretion and increased acidity of the stomach contents, which, it is well known, exerts an inhibiting influence on the gastric and intestinal movements. An interesting observation of Magnus concerns the dilatation of the stomach which occurs under the influence of morphin, and which he attributes to the accumulation of air, which seems to be retained in consequence of spasm of the cardia. To what extent these observations of Magnus on experimental animals may be applied to the human subject remains to be demonstrated. Clinical evidence has shown that under many circumstances the peristaltic movement of the small intestine in man may be completely controlled by the administration of morphin. The possibility suggests itself that this may be accomplished when small doses are used rather by a suppression of the exciting cause of hyperperistalsis, such as some sensory irritation, with perhaps a blockade of the foodstuff in the stomach, than by the direct influence of the drug on the motor mechanism of the intestine. These investigations suggest the interesting practical questions: To how great an extent does the use of morphin previous to operation tend to favor the occurrence of acute dilatation of the stomach, and what is the action of anesthetics, like chloroform, on the movements of the gastrointestinal canal?

THE INFLUENCE OF SUBCUTANEOUS INJECTION OF LIVER EXTRACT UPON THE HEPATIC METABOLISM OF URIC ACID.—L. B. Stookey (*Jour. Med. Research*, 1906, XV., 321) in association with A. S. Granger has previously shown that the subcutaneous injection of liver extract (dog) may lead in the same animal to an increased elaboration of nitrogenous end products into urea, and that liver extracts heated to 55 deg. C. were not found to have this stimulating action. Attention was, therefore, directed to the possibility of an enzymotic formation of urea. These same studies were directed upon the hepatic metabolism of uric acid. Stookey reviews the literature bearing on the destruction of uric

acid by the animal organism, especially as regards the liver and other organs, and the dependence of destruction on the activity of an enzyme which has been called a "uricolytic ferment." Stookey made extracts from the liver of several dogs, then made daily injections of amounts varying from 10 to 50 c.c., and at the conclusion of each experiment the uricolytic power of the liver was determined by hashing the organ finely and estimating the amount of uric acid destroyed in a certain time. Control experiments were made on normal dogs. The results showed a noticeable increase in the uricolytic power of the liver of treated dogs over that of the normal animals.

THE TREATMENT OF ANGINA PECTORIS.—Weissbart (*Zentralbl. f. die gesammte Therapie*, 1907, XXV., 173).—Reports upon a preparation known as dyspnon, which is dispensed in tablets containing each $3\frac{3}{4}$ grains of theobromine sodiosalicylate, $1\frac{1}{2}$ grains of theobromine sodioacetate and $1\frac{1}{2}$ grains of extract of quebracho, as being of value in angina pectoris and allied conditions. He has used dyspnon in five patients. The first was an instance of syphilitic aortic insufficiency with coronary angina in which the anginoid attacks remained absent as long as the medication was continued. Good results also followed its use in an instance of stenocardia due to aortic and mitral insufficiency and in a patient suffering from arteriosclerosis with apoplectic seizures. Weissbart recommends the employment of this preparation in the cardiac asthma of endocarditis and arteriosclerosis. The usual dosage is two tablets three times daily.

SANTONIN.—S. Journet (*La quinzaine therap.*, 1907, VIII., 31) has studied the interesting question of the treatment of diabetes by means of santonin, and states that under its influence the glycosuria becomes rapidly diminished, the polyuria becomes lessened, the patient's strength is increased, and the thirst and the dryness of the mouth are ameliorated. Santonin also possesses a stimulant effect upon the nervous system as well as an antispasmodic action, and, in view of the important role played by this system in the genesis of diabetes, ought to diminish the glycogenic function of the liver. Santonin should be prescribed, just as are valerian, camphor and its bromide, and the various cyanides, in conditions in which we wish to lessen or prevent excessive muscular contraction and when we desire to restore to the nervous system its normal regulator action. Bircage considers that this drug possesses an analgesic effect in the lightning pains of tabes and that its feeble toxicity permits its continued administration.

SURGERY.

IN CHARGE OF

MALVERN B. CLOPTON, M. D.

RESULTS OF RADICAL OPERATIONS FOR THE CURE OF BREAST CARCINOMA.—Halsted (*Ann. of Surg.*, July, 1907).—The paper is in part statistical, but much space is given to a general consideration of the subject. Two hundred and ten traced cases, operated upon more than three years before, form the material for study. The percentage of cures (using the three year limit) was 42.3. Of the pathologic varieties the adenocarcinoma offered the best results, 75 per cent of the cases being cured; while large infiltrating scirrhous had only 20.5 per cent cures, and the small infiltrating scirrhous, which numbered the most cases, was hard to cope with, only 35.5 per cent being cured. In sixty-four cases no glandular involvement was discovered after the most careful search, yet in fifteen of these there was metastasis or recurrence of some sort sooner or later—in six, three years after operation. The percentage of cures for three years for this group was eighty-five. Of 110 cases with the axilla involved and a negative neck, there are 24 per cent cured. Of the group with the glands of the axilla and neck both involved, five cases remained well three years and thirty-four were not cured. The supraclavicular operation was urged in all cases with palpable operable neck involvement, or when the apex of the surgical axilla is involved. When mid-axillary involvement is demonstrated the neck is almost certainly involved and should be cleaned of all its lymphatics as high as the bifurcation of the carotid. The neck operation can be omitted in hopeless cases, in most "duct cancers" and in adenocarcinoma when axilla is uninvolved. The operation mortality in 232 cases was 1.7 per cent.

Halsted is convinced that cancer of the breast is but very rarely disseminated by blood vessels, but the growth is spread centrifugally along fascial planes, even reaching the bones by permeation, the bones involved being those beneath the surface involvement, the forearms and lower legs being practically free.

In operating on "cancer cysts" it is absolutely essential that the diagnosis be made on the operating table by the surgeon noting the barely thickened point, the slight lack of luster, the faintest difference in color and in texture, and his suspicions should be aroused by the presence of blood-stained fluid. If the cancer is diagnosed and a complete operation done upon these cysts the results are the best in breast surgery, but if a complete operation is not done until later the prognosis is hopeless.

As cases are coming to the surgeon earlier than ever before, the diagnosis of these earliest cases become a refinement which requires great care and precision and the cases must be studied longer and more carefully, and our suspicions aroused when there is the slightest limitation of the excursion of the skin over the breast with the nodule as compared with the healthier organ, and in suspicious cases exploratory incisions should be made not into the growth but down to it, and a diagnosis made from the fibrous appearance and shortening of the surrounding

trabeculæ. In scirrhus the disease may be active and metastasis occur long before the visible or palpable tumor is developed.

To close the breast wound more or less regularly by any plastic method is hazardous and should be vigorously discountenanced. Remove a large circle of skin and graft the defect if the wound cannot be closed. After incomplete operations the local manifestations of recurrence are almost invariably deplorable and the prognosis hopeless, and recurrences are relatively later when vigorous chemical caustic or actual cauterizing has been employed.

He is of the opinion that toxins are generated by the cancer and cause disseminated pains in knees, legs, arms and back which suggest cancerous involvement and that by removing the growth these pains are lessened. There is also a reactionary, boardlike edema of the pectoral region, occasioned by presence of an undemonstrable growth which is later followed by rapid cancer growth.

CARCINOMA OF THE BREAST.—Greenough, Simmons, Barney (*An. of Surg.*, July, 1907).—Out of 416 cases of primary operations for cancer of the breast at the Massachusetts Hospital from 1894 to 1903 inclusive, 376 were traced to a conclusive end result at an average period of eight years after operation. Sixty-four cases were alive and well and seven died without recurrence, over three years after operation. Counting in the operative mortality, there were 320 attempts at radical cure, sixty-seven of which, or 20.9 per cent, were successful. During this same period palliative operations were performed on fifty-six patients (15 per cent), and fifty-two cases were discharged untreated. Cases in which the tumor was ulcerated, or was adherent to the skin or to the chest wall, and cases in which the axillary glands were palpably enlarged, gave notably less promising results than when these conditions did not exist. No cases with palpably enlarged cancerous glands above the clavicle and no case of cancer of both breasts, was cured. Medullary carcinoma was more grave than that of the scirrhus type, and adenocarcinoma and colloid were relatively of a far less malignant type. The duration of the disease, other than in the individual case, exerted little influence on prognosis. Extensive operations with wide removal of the skin gave the greatest freedom from local recurrence. Removal of the pectoralis minor appeared to be of slight significance. Incomplete operations on early cases yielded better results than extensive operations in cases which were well advanced. Recurrence in the scar occurred in less than one-half of the cases. Internal metastasis was most frequent in the lungs, mediastinum, in the axillary and supraclavicular glands, the liver and the spine. Seventeen out of eighty-eight cases, or 19 per cent, of those passing the three year limit without evidence of recurrence showed recurrence later, and four cases developed recurrence six years or more after the operation.

END RESULTS FOLLOWING OPERATIONS FOR CARCINOMA OF THE BREAST.—Meyer (*Surg. Gyn. Obst.*, July, 1907).—The author's statistics for operations done over three years before are compiled from sixty-three cases. Of this number twenty-eight lived from three to 12½

years after the operation (44 per cent). In one case of this series death from diabetic coma followed the operation. The author's complete operation was performed, the axillary contents and both pectoral muscles being removed. He does not believe it desirable to clean out the supraclavicular space at the time of the first operation, as in none of the thirteen patients that remained well from five to 12½ years were the supraclavicular glands removed. Edema of the arm has been noted in about 10 per cent of the cases and was then of a transient nature, due to the cicatrix, but in only one case did it persist. The post-operative neuralgia or neuritis of the brachial plexus has been temporary in every instance. If the disease has reached the supraclavicular nodes, there is little hope, in the author's experience, for a longer freedom from recurrence, as every case operated upon died soon after. If the breast is involved in the upper two quadrants, particularly if it involves the skin, the infection of the supraclavicular glands may be expected. He does not believe, however, that radical operation should be refused unless metastasis forbid. Radical operation should not spare skin, and for this reason he does not accept plastic operations, and even doubtful cases, he believes, fare better by radical procedure than by an operation of less magnitude, or undue temporizing.

END RESULTS IN OPERATION FOR CANCER OF THE BREAST.—Dennis (*Surg. Gy. Obs.*, July, 1907).—Out of his large material 50 cases which passed the three-year limit were selected, but the author feels that this is much too short a limit to use to predict a permanent cure. By following all these cases after operation he shows that cancer of the breast is sometimes permanently cured, or at least 25 years have elapsed with no evidence of return; that cases may go as long as 18 years, and yet finally have a return in some other organ; that in the cases that had no return the operation was performed within six months from the incipency of the disease, thus showing the importance of early operation; that the more radical the operation within reasonable limits the better the prognosis. He believes that in some cases in which the outlook is most unfavorable, as manifested by extensive ulceration, hemorrhage and widespread axillary involvement, the end results have been entirely satisfactory.

CARCINOMA OF THE BREAST.—Cabot (*Ann. of Surg.*, July, 1907).—His report is based on 42 cases in private practice. Of these nine are alive today. One case 19 years, one case 14 years, one case 11 years and two cases 10 years, and one case each for 8, 7, 5 and 4 years. These non-recurrent cases were tumors of a mild type, 3 adenocarcinoma, 3 small scirrhus, 1 small plexiform medullary, 1 Paget's disease. In 6 of the cases glandular involvement was not found. From studying this small series of cases the author believes that the question of recurrence depends more on the character of the growth and the degree of involvement of the lymphatics than on the thoroughness of removal, as in 7 of the 9 the muscles were not removed. However, he believes that this should not be used as an argument against extensive radical operations, for it is impossible to tell how far the cancer cells have gone at the time of operation. He notes one case of a small nodule, situated in the centre of the

gland, in which he spared the pectoral muscle, but it was in the muscle that recurrence occurred, and since that he has removed the muscle in all cases.

PRIMARY TYPHLITIS WITHOUT APPENDICITIS.—McWilliams (*An. of Surg.*, June, 1907).—The subject is considered through the views of many authors, and one case is added by McWilliams. He believes that primary acute and chronic typhlitis occurs independently of appendicitis, dysentery, tuberculosis, or cancer, and is idiopathic in origin, or depends on coprostasis; that primary typhlitis, the appendix being normal, may lead to perforation, with the formation of typhlitis abscess, or general peritonitis. The symptoms of primary typhlitis are usually identical with those of appendicitis and indications for operation are similar in the two conditions. Primary typhlitis cases are rare in comparison with the frequency of appendicitis. The recurrence of symptoms after removal of the appendix may be due to attacks of typhlitis, the treatment for which consists in the regulation of the diet and use of oil enemata. The danger of primary typhlitis consists in the liability to the rupture of an ulcer and to the development of appendicitis. The treatment consists in removal of the appendix, closure of any cecal perforation, with drainage of the abdomen, and he recommends the removal of a portion of the cecal wall for microscopic study, if that is necessary to establish the diagnosis.

ORTHOPEDIC SURGERY.

IN CHARGE OF
NATHANIEL ALLISON, M. D.

THE PREVENTION OF DEFORMITY AFTER INFANTILE PARALYSIS BY RECUMBENCY DURING THE STAGE OF RECESSION.—Judson (*Providence Med. Jour.*, Sept. 1, 1907).—In the ever changing treatment of disease, the influence of environment is receiving unusual attention. In the treatment of infantile paralysis, the author proposes a method which relies exclusively on the influences of environment and the lapse of time. As soon as the disease is recognized, he would limit the patient to a recumbent position, till the period of recession of the paralysis has passed, which takes, as a rule, several months. As arguments in favor of this belief, he calls attention to the fact that the ill effects of joint disease are seen more commonly in the lower extremities than in the upper; that the arms are free while the legs bear the weight of the body; and that in joint disease, where the environment of the lower extremities has been reformed, there is improvement in the condition. Recumbency gives to all parts the same environment, and in this form of paralysis will lower the disproportion of eight to one that now exists between the upper and lower limbs. This is not proved, but he believes can be readily demonstrated. Passive motion, resistance exercises, electricity, massage, local applications and judicious

medication should be continued. They cannot interfere with the treatment proposed, and their observance may make it easier persistently to maintain recumbency, the most important agent of all.

RESULTS OF TREATMENT OF ACQUIRED AND CONGENITAL TORTICOLLIS AT THE BOSTON CHILDREN'S HOSPITAL SINCE 1879.—Bradford & Seaver (*Boston Med. & Surg. J.*, Aug. 22, 1907).—The conclusions reached in this paper are based upon an experience gained in the last twenty-eight years at the Boston Children's Hospital. The term "torticollis," designating the condition in which the deviation of the head results from a contraction chiefly of the sterno-mastoid muscle, and not those conditions of wry-neck which arise from spinal caries, inflamed glands, etc. The authors conclude that congenital or acquired muscular torticollis may be cured. That an open incision, with complete division of the two heads of origin of the sternocleidomastoid muscle, is all that is necessary, except in unusual cases. That the horizontal incision below the clavicle is the best to use, in that it gives adequate room and also gives the best cosmetic results. That plaster of paris is the best dressing to hold the head in the corrected position. That the plaster dressing should not be worn longer than two months. That the Buckminster-Brown brace, Thomas collar, or wire-collar, should be worn for an average of four months following the removal of the plaster dressing. That it is best to operate on patients between the ages of two and twelve years, to insure a good result and prevent bony deformity of the face and head.

CAUSES AND CHARACTERISTICS OF WEAK FOOT.—Whitman (*Med. Record*, Aug. 31, 1907).—Notwithstanding the fact that flat foot has been analyzed and described by several anatomists, the importance of weak foot, which is the most common and most disabling of all postural deformities, has been unsuspected in the absence of pain. There are two postures of the foot, the position of activity and that of inactivity. In activity the foot is curved inwards at its inner border, and the arch is accentuated. In inactivity the foot is everted, and the body weight is directed towards the inside of the sole. The deformity of weak foot is an exaggeration and continuation of the attitude of inactivity. First, there is abduction, which is followed by a lowering of the arch. Symptoms are not due to deformity as such, and have no proportionate relation to its degree. Congenital or acquired abnormality may cause a predisposition to this condition. Deficient power, weakness of muscles, over-weight or over-strain, and improper attitude, the most important of which is toeing outwards, are the principal factors. Improper footwear is an important factor. The symptoms are faulty attitude, impaired function, sensation of weakness, of tire and strain along the inner border of the foot and beneath the arch. Pain in the heel is often prominent. The discomfort may extend to the calves, knees, and, especially in women, to the back. Children should be taught proper attitudes in walking and standing as preventives.

The author strongly recommends the form of brace which bears his name, as a proper corrective appliance.

THE TREATMENT OF SCOLIOSIS BY THE CREEPING METHOD.—Klapp (*Zeitschr. f. Orth. Chir.*, Bd. XVI., Heft. 1-2).—The author's method of treatment is based on the gait of quadrupeds. In this gait, at one stage the extremities are approximated on one side and separated on the other. When a step forward is taken, the order is reversed. The spine, instead of remaining immovable, curves away from the side on which the extremities are approximated. Such movements of the shoulder and pelvic girdles afford a powerful means of untwisting the scoliotic spine. It is not difficult for children to learn the creeping exercises. The younger they are, the easier it is taken up. For older and rigid cases, the natural method is not sufficient, and in these the author employs three modifications: the rapid performance of movements, forced movements slowly carried out, and movements without progression, in which the effort is made to stretch the curve in the spine, draw in the projecting, and throw out the depressed ribs, which can be accomplished by forced rotation of the thorax, or of the entire trunk. He discusses the greater efficiency of such exercises in the horizontal position, and regards two hours a day as the shortest time which should be devoted to gymnastic exercises.

CONGENITAL CONA VALGA.—Drehmann (*Zeitschr. f. Orth. Chir.*, Bd. XVI., Heft. 1-2).—The author reports two instances of infants six months old, where there was noticed shortly after birth a peculiar attitude of the legs, which were bent at the knees and hips. A skiagram of one showed no bend in the neck of the femur. Another instance in a girl of five years, where walking was learned slowly, and there was great muscular weakness. She could raise herself from the recumbent position only with great difficulty, and it was impossible to flex the extended limb on the body.

PATHOLOGY OF COXITIS.—Werndorff (*Zeitschr. f. Orth. Chir.*, Bd. XVI., Heft. 1-2).—The examination of diseased hips by the x-ray gives important data in the diagnosis, as it assures the early recognition of the synovial form, and the presence of foci. It aids the prognosis, as it makes it possible to observe the progress of cartilaginous changes, the form, the size, the localization of foci, and indicates the possible danger of the focus perforating into the joint cavity. Skiagraphy also aids treatment, as it shows where to operate. The author says: "Will it not influence our therapeutic measures, when on the one hand we observe a gradual, but constantly increasing destruction by the synovial form, while on the other we see isolated foci lasting over half a year without the slightest change? If we only knew whether we ought to operate, and whether we ought not to operate! The early diagnosis by means of the x-ray, and the study of serial exposures may, perhaps, some day give us the answer."

GENITO-URINARY SURGERY.

IN CHARGE OF

H. MCC. JOHNSON, M. D.

TUMORS OF THE BLADDER FROM A MODERN ASPECT.—Kolischer and Schmidt (*Jl. Amer. Med. Assn.*, July 27th, 1907).—Operative interference in tumors of the bladder is not at the present time conducted in a uniform manner, nor is it based on any generally accepted rules, as is the case in other domains of surgery. Each operator has notions and fancies of his own and operates accordingly, employing in many instances methods, which, if applied in other branches of surgery, would bring ridicule on his head. One essential principle is apparent; benign tumors should be approached from the inside, malignant tumors from the outside of the bladder. The intrinsic qualities of a benign tumor are such that it is manifestly sufficient if its mucosa, submucosa and pedicle alone be removed; it is not necessary, in operating on such a tumor, to go through the entire thickness of the bladder wall and resect all its layers. In approaching benign tumors from the inside of the bladder, two methods are at hand: one, the endovesical, through an operative cystoscope; the other through an incision in the viscus, which renders accessible the implantation of the growth. In the former method after a proper dilatation of the bladder, the operative cystoscope is introduced, and the tumor removed with the galvanocautic snare. Then, if deemed necessary, the stump of the pedicle is again cauterized with a straight, solid galvanocautery. The severed tumor either is picked up by forceps introduced through the cystoscope, or, after removal of the cystoscope, is pumped out through an evacuator. In case of a large tumor it may be removed piecemeal by the same means. The writers prefer the direct view instrument, except in cases where the tumor is located in the vertex of the bladder.

The other method for the removal of a benign tumor involves its bloody execution after the bladder has been opened by an incision. The anterior aspect of the bladder should be freely exposed in order to gain space for a generous incision. The bladder wall is caught by a few sutures, which are used later on as guy ropes. The tumor and its face are brought into full view and made easily accessible, either by catching the base of the bladder with sutures, or by having an assistant make pressure from the rectum or the vagina, as the case may be, and thus force the base and fundus of the bladder upward. Sutures are now run beneath the insertion of the tumor and are promptly tied, one by one, in the path of the operator as he is excising the base of the growth. This detail in technique prevents the hemorrhage which otherwise would flood the field of operation and necessitate extensive sponging and continual hunting for the excision wounds, and thus avoid a traumatism of the mucosa, which might interfere with the prompt and complete closing of the bladder. Care should be taken not to grasp the tumor with the fingers or forceps, since, as a rule, such growths are very friable and are apt to bleed profusely when crushed or torn. If the tumor be located close to the vesical portion of one of the ureters, one end of a ureteral

catheter is run a few inches up into the ureter, previous to the insertion of the preventive stitches and the other end is led out through the internal orifice of the urethra and thence outside by way of the urethra. Should some of the preventive sutures encircle the vesical end of the ureter, the catheter would be found engaged. In this case it is simply left in place for a week or so, until the healing process has progressed sufficiently and then withdrawn. After the main tumor has been removed, the entire inner surface of the bladder should be inspected to discover any smaller size papillomata, should such be present. Particular attention should be paid to the parts opposite the main tumor.

After removal of the tumor, the bladder is closed by two layers of sutures, the closed viscus suspended to the abdominal wall to exclude any dead spaces and the incision closed without drainage. In cases of malignant tumor, after freely exposing the bladder and opening it as close to the site of the tumor as is compatible with surgical demands, the growth is removed, with the section of the entire thickness of the bladder wall to which it is attached. This resection, in case it does not involve more than one-third of the bladder, should be followed by total suturing of the viscus. After the organ is closed, a cigarette drain is run down to the deepest point of the bed of the wound, the bladder is suspended to the abdominal wall and all closed up, save for the point of drainage. The permanent catheter should never be employed in cases of partial resection and subsequent complete suturing of the bladder; if necessary the patient is catheterized at appropriate intervals. Should the tumor involve a ureteral opening, the bladder is dissected out to such an extent, that not only complete excision of the tumor base becomes possible, but also the vesical end of the ureter is laid bare. The ureter is clipped off at its insertion into the bladder and then the excision of the tumor base, including the ureteral mouth, is accomplished. The stump of the ureter is now re-implanted into the upper end of the excision wound, after one of the standard methods, and the wound closed as completely as is feasible. In those cases in which a radical operation is no longer possible, there are two methods of relieving the patient's suffering. One method is to open the bladder from above and cauterize the exulcerated surfaces with a Paquelin. As a rule this intervention does not benefit the patient to any great extent. The other method, which furnishes more satisfactory results, consists of establishing permanent kidney fistulæ, and thus diverting the urine from the bladder. The authors conclude as follows:

1. All benign tumors of the bladder should be approached from the inside, all malign tumors from the outside of the viscus.

2. In all malign cases in which the loss of substance is not too great the bladder should be closed completely by sutures after the removal of the tumor.

3. In cases of malign tumor the incision into the bladder should be made in accordance with the location of the growth, as defined by the cystoscope.

4. The permanent catheter should be absolutely abolished.

5. Gas anesthesia should be employed exclusively.

6. A constant cystoscopic surveillance should be maintained over any bladder that has ever been operated on for tumor.

CONCERNING A DISTINCT TYPE OF HYPERNEPHROMA OF THE KIDNEY WHICH SIMULATES VARIOUS CYSTIC CONDITIONS OF THAT ORGAN.—Weil (*Ann. Surg.*, Sept. 1907).—The author refers to a type of hypernephroma which differs from the typical cystic hypernephroma in that the latter never breaks down to form single large cystic tumors, but simply contains cyst cavities in the mass of the growth. He has collected and presents the reports of the five cases which have appeared in the literature since 1883, in addition to one personal observation. Peculiar to the cyst-hypernephroma are the clinical signs of a cystic instead of a solid tumor of the abdomen, the prolonged period of growth and the character of the hematuria, the absence of very late occurrences of metastases and the presence of pressure symptoms from the stomach or other abdominal viscera, due to the large size of the cystic growth. This group of symptoms, if at all constant, would seem a sufficiently characteristic syndrome. The character of the urine is determined by the anatomical relations of the tumor. Differentiation from other abdominal cysts depends largely upon the presence or absence of hematuria. In the latter cases the differentiation from ovarian and other forms of cysts must be made from the location, the relation to the colon and other criteria upon which reliance is generally placed. In the former group of cases, the presence of hematuria, combined with the cystoscopic findings, reveals the renal origin of the tumor. In this case the differential diagnosis must concern itself with all other cysts or cyst-like dilatations of the kidney or pelvis associated with hematuria. If certain salient characters of cyst-hypernephromata, their prolonged course, their comparatively benign character, the absence of colic, their characteristic content of blood and cholestrin be kept in mind, the diagnosis will rarely present great difficulties. Removal is generally a simple matter and offers a radical cure. This course should, therefore, be followed in every case in which the operation is not contraindicated by the age or condition of the patient. Drainage or repeated tapping should never be resorted to.

MOBILE KIDNEY, WITH A DESCRIPTION OF AN OPERATION FOR ANTERIOR NEPHROPEXY.—Bishop (*Lancet*, Aug. 3, 1907).—The writer's operation is an attempt to form a sort of a pouch, the walls of which are adherent to the kidney, to retain it in normal position. His technique is as follows: After the kidney region is exposed, through an anterior incision, a transverse incision is made through the posterior parietal peritoneum over the lower fourth of the kidney, the two peritoneal flaps being held apart, a curved incision, concaved upwards and outwards, is made through the kidney capsule and the lower segment of this loosened from the anterior renal surface down to its inner and lower extremity, turned downward and attached by two or three sutures to the fascia beneath. The peritoneum is now sewn up with catgut, bringing its lower flap in contact with the raw anterior surface of the kidney. The organ is now held in position, while with long straight needles a row of sutures are placed below the kidney, beginning immediately below the ureteric insertion and carried to the outer and inferior angle of the kidney. These sutures pass entirely through the posterior parietes and are tied over the muscles of the back, an incision being made through the skin for this purpose.

THE EXTENSION OF THE FIELD OF TREATMENT OF CERTAIN RENAL AND VESICAL CONDITIONS THAT IS MADE AVAILABLE BY A NEW CONTRIVANCE FOR LONG CONTINUED DRAINAGE OF THE KIDNEYS THROUGH RENAL FISTULA IN THE LOIN.—Watson (*Ann. Surg.*, Sept., 1907).—The writer proposes the simultaneous performance of bilateral nephrostomy, tying off both ureters at the same time and establishing permanent renal fistulae, thus diverting the entrance of all urine into the bladder, for the following purposes: As a palliative measure, in cases of inoperable vesical tumor and in cases of vesical tuberculosis originating in descending infection, in which both kidneys are involved and when the tuberculous lesions of the bladder are causing suffering, and as a preliminary step to the total extirpation of the bladder in certain cases of vesical tumor. The contrivance described by the writer to maintain efficient drainage and do away with the disagreeable features of urinary fistulae, consists of a hard rubber cup-shaped shield, through which the tube that enters and drains the kidney is passed, a light metal receptacle into which the urine is conveyed, a rubber tube attached to the bottom of the receptacle by means of which it may be emptied and elastic bands to pass around the body and hold the contrivance in place. The receptacle is replaced at night by long tubes which drain the kidneys directly into a bottle at the side of the bed. The writer has used this device in two cases with entire success.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF
HUGO EHRENFEST, M. D.

SUBCUTANEOUS HEBOTOMY (Pubiotomy).—Kannegiesser (*Archiv f. Gynaek.*, Bd. 81 H. 3).—In this very interesting paper a resume is given of the results obtained in Professor Leopold's clinic, in Dresden, in a second series of 30 pubiotomies performed within the last 15 months. In comparison with the 21 cases of the first series the fact is noteworthy that in the second series all mothers and all children were discharged from the hospital well, while of the first series four of the children were lost, although all the mothers had recovered. In all cases the patient, immediately after the os pubis was divided, had been delivered, thus in the total number of 51 operations forceps was applied 28 times, version and extraction performed 20 times. In one case craniotomy became necessary, in two cases of foot-presentation the fetus was simply extracted. Of special interest are six cases in which a labor was observed subsequent to a pubiotomy. In these six cases the next baby was born spontaneously once, in one case version, in another a Cesarean section had to be performed; in the remaining three cases the babies were born prematurely, twice due to operative intervention for this purpose.

USE OF A VENTRAL BANDAGE DURING LABOR.—Vallee (*Annal. des Sc. Med. de Lille*, rev. *Am. Jour. of Obst.*, August, 1907).—The author describes a method of assisting labor by the use of a bandage

placed around the abdomen of the patient so as to exercise a firm compression on the uterus from the beginning of true labor pains until delivery. With this is combined the horizontal position of the patient in bed from the beginning of labor. As the fetus escapes from the pressure of the bandage in the last stage of labor, the hands of the assistant exert pressure following down the body of the child. The uterine contractions become regular, strong and frequent from the time of application of the bandage. The bag of waters is kept intact, and presses down through the cervix, which is directed into the center of the pelvic canal by the rectified position of the uterus. Thus the bag of waters exercises its normal dilating force in the right direction and is most efficient. The patient suffers much less than usual, and is less fatigued by the labor. No bad effects upon the infant are observed. Labor is much hastened and ends in a few hours. The placenta is delivered quickly with little hemorrhage, and no clots are found in the vagina. The method has been successful with all presentations.

THE TIME OF LEAVING BED AFTER NORMAL LABOR.—Bouchacourt (*Presse Medicale*, rev. *Jour. Am. Assoc.*, Sept. 7, 1907).—The author reviews the disadvantages and advantages of the puerperal woman leaving the bed early after a normal labor. The dangers in the main are infection, arrest of involution of the uterus, danger of uterine displacement, of embolism, and finally the danger of ptosis. Only the last mentioned really need be considered. All the authors who recommend leaving the bed early insist upon the use of a proper abdominal bandage. Infection can be avoided. Early leaving of the childbed, indeed, seems to hasten the involution of the uterus, and to lessen the danger of a displacement. Of course, sudden movements may lead to embolism, but Kuestner, in his very extensive experimental researches, did not meet with a single instance of embolism. Among the advantages of a short stay in bed are a favorable influence upon digestion, circulation and urinary function, and the promotion of milk secretion.

Bouchacourt advises considerable freedom of movements while the woman is in bed. Gymnastics and passive movements are advised by some authors. The length of stay in bed should be suited to the character and social station of the patient and the gravity of the case, from one to two weeks being sufficient in normal cases.

ABORTION CAUSED BY X RAYS.—Fraenkel (*Zentralbl. f. Gyn.*, No. 31, 1907).—By means of experiments on animals Fraenkel was able to further support the claim of Fellner and Neumann that x rays cause distinct degenerative processes in the ovaries, and in pregnant animals result in a retarded growth of the ovum. While Fellner and Neumann hold the production of leucotoxines responsible for the detrimental influence upon the pregnancy, Fraenkel believes that this harmful effect is caused by the degenerative processes in the ovaries. Similar is the effect of an exposure of the thyroid gland to the x rays. These results encouraged Fraenkel to use x rays as a means of producing artificial abortion.

Interruption of a pregnancy of three months seemed indicated in the case of a young woman in whom a pulmonary tuberculosis, immediately

after impregnation, rapidly began to grow worse. The author applied the x rays to both ovaries and to the thyroid gland. By protecting the rest of the abdomen with a lead plate he tried carefully to limit the effect of the rays to the ovaries. Twenty-five exposures were made, lasting from five to ten minutes, every other day the thyroid being exposed. After a short labor the ovum was expelled *in toto*.

Although the writer is convinced that the abortion was the result of the ovarian changes, he cannot deny that possibly a direct harmful influence is exerted by the rays upon the fetus. He also states that at times during the exposure the patient would complain of a cramping pain, probably caused by a uterine contraction, or would involuntarily void urine, indicating a contraction of the bladder. Of course fear, as a psychic effect of the procedure, may have played a role in the causation of these two phenomena.

The writer also mentions three cases in which marked disturbances of menstruation appeared in women in whom the thyroid gland was exposed to the x rays on account of a struma. In two patients menstruation was delayed and extremely scanty, in a third amenorrhea resulted. [Similar observations have been recorded by Lengfellner (*Muenchn. Med. Woch.*, No. 44, 1906), as the result of Roentgenisation of the pelvis for the purpose of obtaining photographic pictures.—Ep.]

PEDIATRICS.

IN CHARGE OF
ALFRED FRIEDLANDER, M. D.

PSEUDOMASTURBATION IN INFANTS.—Rachford (*Arch. of Ped.*, August, 1907) contributes a valuable statistical study with a collection of hitherto unreported cases.

Pseudomasturbation is a syndrome occurring in infancy and early childhood, which has also been described as thigh-friction and infantile masturbation. The child lies on its back; the thighs are flexed, crossed and pressed tightly together, closely embracing the external genitalia. In this position the infant makes a wriggling or up and down body movement and rubs its thighs together. In other instances the genitalia are rubbed with the hands or feet against some piece of furniture or other foreign object. These movements are apparently attended by pleasurable excitement; the face is flushed, and there is a marked increase in the general nervous tension. Following this act, which continues for a few minutes only, there is general relaxation, accompanied for a few minutes by mild perspiration, quiet contentment and in some instances sleep. The average age of the onset of this neurosis in the cases presented in the author's table is 16 months, though the condition may occur as early as the 4th month. The vast majority of all cases occur in female infants; thus of the 52 collected cases, 48 occurred in female and

4 in male infants. The explanation offered by the author for this is that irritations of the genitalia are much more apt to be overlooked in the female than in the male child, while in addition it is noteworthy that the clitoris is more exposed to external irritants in infancy than in childhood, because of the comparative lack of development of the labia which later enfold it. The habit, which is formed by the practice of pseudomasturbation, becomes, after a time, one of its most potent causal factors. Heredity is an all-important factor, as in fully three-fourths of the cases there is a distinct neurotic inheritance. A gouty inheritance may also predispose to this condition by producing in infants the tendency to periodic attacks of acid urine. Illness, and especially malnutrition, greatly increase the irritability of the nervous system of the young, and in this way may be factors in starting or in prolonging this habit. Among the direct causes are those which produce irritation about the genitalia. Thus an acid condition of the urine occurs in more than one-third of the cases published. Constipation, and on the other hand colitis, may be other causes. Diseases of the rectum, pin worms, tight and irritating clothing, and uncleanliness of the genitalia, are also causes. The prognosis is very good, though the period of time required is long. The average of the cases reported was 19 months. There is practically no connection between the pseudomasturbation in infancy and true masturbation in later life. The essential part of the treatment consists in the interruption of the habit as soon as possible, and in the immediate removal of all causes of irritation. Constant watchfulness is an essential. The child should be kept in a sitting posture as much at a time as possible. In some cases, forcible restraint may be necessary.

So far as general measures are concerned, the author lays great stress upon the relieving of acid conditions of the urine. For this, benzoate of soda and tincture of belladonna may be employed in appropriate doses. Older children, in whom the practice is apt to occur at night, may often be helped by the use of bromide of potash and belladonna given at bed-time. It must be remembered, however, that these cases must often be watched over a period of years to prevent a recurrence of the habit, even after it has temporarily disappeared.

ENLARGEMENT OF THE EPITROCHLEAR AND OTHER LYMPHNODES IN INFANTS.—Hess (*Arch. of Ped.*, Aug. 1907) has examined 225 infants with reference to enlargement of the superficial lymphnodes. The vast majority of the children examined (and the series was made up of routine dispensary cases) showed enlargement of certain groups of glands. Thus in 197 cases in which the posterior cervical glands were searched for, they were found 173 times. The group involved next in frequency was the inguinal, being found enlarged in 119 cases out of 147 examined. Three hundred cases were examined with particular reference to enlargement of the epitrochlear glands. Minute bilaterally enlarged glands were found to be very common. Small bilaterally large glands were found in 26 cases, representing a great variety of diseases, and including only 3 cases of syphilis. Large bilaterally enlarged glands were found in 15 cases of the 300, and 6 of these cases were syphilitic, with the possibility that syphilis played a role in 3 of the others. The author is of the opinion that in view of the rarity of marked bilateral enlargement of

the epitrochlears in children, and in view of the fact that in the preponderance of the positive cases there was evidence of syphilis, this may be an important diagnostic point. It is noteworthy that in older children enlargement of the epitrochlear is not necessarily a syphilitic sign. While the absence of such epitrochlear enlargement in infancy does not negate the diagnosis of syphilis, its presence may offer valuable diagnostic evidence.

EPILEPTIC DEMENTIA IN CHILDHOOD AND ADOLESCENCE.—Voisin (*Rev. Mens des Mal de L'Enf.*, Aug. 1907) says that dementia is a common termination of certain forms of convulsive epilepsy; that it may manifest itself in childhood, but more often in adolescence. Coming on in early childhood it prevents mental development of the child, and constitutes acquired epileptic idiocy. Coming on in later childhood or in adolescence, it may or may not be accompanied by phenomena of spasmodicity. In the latter case it may lead to so-called dementia precox in one of its several varieties. Its course may be slow or very rapid; in rare cases general paralysis may cause dementia in young epileptics. While the spasmodic dementia appears to occur directly in the evolution of epilepsy, epileptic dementia precox seems to be a degenerative process, and the epilepsy itself does not play so direct a role in its production.

THE TEMPERATURE OF NURSINGS.—Nobecourt and Merklen (*Rev. Mens des Mal de L'Enf.*, Aug. 1907) have studied a series of cases to determine the normal temperature curve in nurslings. They find that the infant does not present the line of variation commonly seen in the adult, even in health. The infant has a monothermal temperature, with little variation in the morning and evening. This monothermal temperature is constantly found in normal infants at least up to the fifth month in life. Interference with this regular line betokens always a pathological condition.

STATISTICAL STUDY OF WHOOPING COUGH AT BRETONNEAU HOSPITAL, Paris.—(*These de Paris*, 1907; *Rev. Mens*, Aug. 1907).—The prognosis of whooping cough in the hospital is very serious on account of the great danger of grave complications, from which no patient in the hospital is safe. Cases of so-called hyper-pertussis, with seventy or eighty paroxysms in the day, are very rare under proper treatment, but the danger of pulmonary complications is still very great. Mortality in this hospital ranges from 15 per cent to 20 per cent. The author is of the opinion that cases of whooping cough ought to be strictly isolated, even in the hospital, and that there should be no such thing as a whooping cough ward.

NEUROLOGY.

IN CHARGE OF
SIDNEY I. SCHWAB, M. D.

THE FUNCTIONS OF THE TRIGEMINAL NERVE.—Davies (*Brain*, No. 118, 1907).—An extended abstract of this paper would be necessary to do it justice. It is mentioned in this department because it illustrates the scientific use of post operative material towards the elucidation of physiological problems. The material made use of consisted of the personal examination of thirty cases in which the Gasserian ganglion had been removed; the use of notes and further communication in twenty other cases; experimental evidence on animals made by Victor Horsley. The subject matter has been collected under the following headings: 1. Distribution of the fifth nerve to the skin of the face. 2. Distribution to the external auditory maatus, and the membrana tympani. 3. Distribution to the mucous membranes. 4. Distribution to the deep structures. 5. Distribution to the organs of special sense. 6. Motor distribution. The results of these observations are arranged in a table which renders them easy for reference. This paper may be regarded as a final paper on the sensory results of removal of the Gasserian ganglion as far as the present methods in vogue in sensory examinations make possible.

THE TRIAL OF THE INSANE FOR CRIME; A HISTORICAL RETROSPECT.—Lloyd (*Amer. Jl. Insanity*, July, 1907).—Attention should be called to this scholarly article for the light it throws on the historical development of insanity as a defense for crime. Lloyd shows that the development of the rights of the accused has been a very steadily increasing one, and that perhaps there has been too much of a tendency to depart from the old common law attitude which in its extremest fashion denied to certain sorts of criminals the right of counsel. He closes his paper as follows: "It is well perhaps for the modern reader in his complacency to reflect that in the present day we may have gone to the other extreme. Some one ought to write a treatise on the abuses of the legal art of defense. Certainly we see today the prisoner and his counsel allowed every latitude. Every loophole of escape is opened to him. Irrelevant testimony, technicalities, insanity dodges, appeals to popular prejudices and by-plays to the jury now consume days in the trial of a case in which the issue is so simple that under the old common law when courts sat all night and juries were not allowed meat, drink or fire, the prisoner could have been convicted between sunrise and sunrise."

LANDRY'S PARALYSIS.—Sheppard Hall (*Review Neurology Psychiatry*, August, 1907).—The case concerns a boy of 17. The clinical aspect of the case corresponds well with the description given by Landry for his original case. The coincident appearance of symptoms in both extremities at the same time are regarded as especially characteristic. The following points were especially noted: The excessive pressure of the cerebrospinal fluid. The increased number of red and white cells and

the decrease of the eosinophilous cells. The presence of an organism in the spinal fluid, its reaction to various fluids and its vitality.

AMBULATORY AUTOMATISM.—Patrick (*Jl. Mental and Nerv. Dis.*, June, 1907).—In this president's address before the American Neurological Association, Patrick gives a comprehensive survey of this interesting subject, and notes certain conclusions of his own which are of importance. By the term ambulatory automatism is understood a pathological syndrome appearing in the form of intermittent attacks during which the patient, carried away by an irresistible impulse, leaves his home and makes an excursion or journey justified by no reasonable motive. The attack ended, the subject unexpectedly finds himself on an unknown road or in a strange town. He returns home, but sooner or later a new attack provokes a new escapade. This definition is given by Pitres, but it is necessary to modify in some particulars. The patient is frequently totally unconscious of what has happened to him in the meantime and further he usually acts in a strictly normal way during the period of his wandering. In its widest sense the disturbance occurs in the course of a very diversified number of diseases and in a small number of instances it is undoubtedly a part of a degenerate condition. Certain neuropaths, for example, are inveterate wanderers, victims of an almost constant ambulatory or traveling obsession. Between all the groups of conscious errants and the ambulatory automaton there is some sort of relation. A consideration of the author's own cases and the reported instances of this condition has impressed him with the importance of another element in the causation of flights. This is the inherent tendency of the patient to run away from trouble. Patrick describes a number of cases to illustrate these remarks, and gives in addition a critical resume of the important literature. The paper forms a valuable addition to what we know on this subject.

OPHTHALMOLOGY.

IN CHARGE OF
JOHN GREEN, JR., M. D.

HARD CHANCRE OF THE CONJUNCTIVA.—Aubineau (*Ann. d'Oculist.*, July, 1907).—A married woman, 22 years of age, presented a yellowish-white adherent membrane occupying the central part of the palpebral conjunctiva. The preauricular gland was enlarged to the size of an almond. The exudation next invaded the cul-de-sac and ocular conjunctiva, the lower lid began to swell and the submaxillary glands became enlarged. Later the lesion assumed the aspect of a shallow ulcer with irregular margin. Scrapings from the ulcer treated by the Proca-Vasilescu plan showed the spirochætæ stained an intense violet, contrasting with the pale violet of the rest of the specimen. The pa-

tient later developed an infiltration of the cornea, and a syphilitic eruption made its appearance on the skin.

Aubineau states that the primordial signs of chancre of the conjunctiva are (1) local induration and (2) adenitis. The former is a late sign and hence less important for the early diagnosis than the latter. When the lesion assumes an ulcerative character, however, induration becomes the more important diagnostically. In the present case the discovery of the spirochætæ led to recognition of the nature of the conjunctival lesion before the appearance of the secondary symptoms.

ON A NEW WAY OF DIAGNOSING TUBERCULOSIS IN MAN BY THE OPHTHALMO-REACTION OF TUBERCULINE.—Calmette (*Gaz. des Hôpitaux*, June 25, 1907).—Calmette instils into the conjunctiva a solution of dry tuberculine, precipitated by alcohol at 95 degrees, in distilled and sterilized water. The liquid, which must be fresh, has a strength of 1 per cent. When this solution is dropped into the eye of a healthy subject no reaction follows. Those who suffer from tuberculosis, however, present a very definite local reaction, now known as the "Ophthalmic-reaction of Calmette." Thus, three to five hours after the liquid has been placed in the eye there is obvious congestion of the palpebral conjunctiva which becomes of a lively red color and the seat of a more or less intense edema. It is accompanied by lachrymation. At the end of six hours filaments of fibrinous secretion may be seen in the conjunctival cul-de-sac. The reaction attains its maximum in from six to seven hours. It disappears after sixteen hours in the child and after from twenty-four to thirty-six hours in the adult. The experiment produces no pain and but trifling discomfort.

THE EARLY DIAGNOSIS OF TUBERCULOSIS BY THE OPHTHALMO-REACTION.—Prouff (*Gaz. des Hôpitaux*, August 8, 1907) made seventy instillations by this method and every known tuberculous subject showed the reaction, with the exception of one who was moribund. Newly born children are exempt or almost exempt from tuberculosis, and Prouff failed to excite conjunctival reaction by dropping tuberculine into the eyes of six babies one day to one month old. Prouff concludes that the reaction occurs in every tuberculous patient.

ON THE EARLY RECOGNITION OF TUBERCULOSIS BY THE TUBERCULINE OPHTHALMO-REACTION.—Calmette (*Gaz. des Hôpitaux*, August 8th, 1907).—In his last communication Calmette claims the ophthalmic-reaction allows one to establish with precision the diagnosis of tuberculosis in doubtful cases. Since the publication of his first note, Calmette and his pupils have employed tuberculine on a large scale and more than a thousand trials have been made by hospital physicians in Paris and the provinces. All observations go to prove that the ophthalmic-reaction can be obtained in all forms of tuberculosis unless the patient is moribund, or almost so. Newly born babies fail to show the reaction. The application is inoffensive on condition that the non-glycerized preparation is employed. It is capable of rendering great clinical service in the recog-

dition of the most varied forms of tuberculosis and should be looked upon as simple, trustworthy and harmless.

PURULENT CONJUNCTIVITIS IN A BABY BORN AFTER CÆSAREAN SECTION.—Terson (*Ann d'Oculist*, July, 1907).—The section was performed at term without accident. As soon as the baby's head appeared in the uterine incision, it was noticed that the eyes were red, swollen, and secreting. Terson saw the case soon after the operation and found that the baby was affected with a very intense purulent ophthalmia of both eyes. By treatment with silver nitrate and permanganate the disease was cured in about ten days without corneal complication. The organisms found were statphylococci, together with an organism resembling the micrococcus tetragenus.

OTOLOGY AND LARYNGOLOGY.

IN CHARGE OF
W. E. SAUER, M. D.

THE PREVENTION OF DEAFNESS.—Scheppegrell (*Med. Rec.*, Sept. 7, 1907).—According to the author, by far the greater number of diseases which affect the hearing owe their origin to a pathological condition in the nose or nasopharynx, the point of entry being the eustachian tube. When the lining membrane of this tube is inflamed or congested, or blocked with secretion, the equipoise of the drum is disturbed, due to the unequal atmospheric pressure, and the hearing is diminished in proportion, and when this is continued for a long time the hearing is injured permanently. In children the condition is due most frequently to hypertrophy of the pharyngeal tonsil (adenoids) and even though the breathing is not interfered with, the effect on the hearing is marked, and therefore calls for prompt surgical relief. Suppurative inflammation of the middle ear is a frequent cause of deafness; and as soon as pressure against the drum is observed, a free incision should be made; the natural bursting through the drum destroys more tissue and may leave a noticeable defect in hearing. Nasopharyngeal catarrh is an important factor in the development of ear diseases, and should not be neglected. All forms of nasal disease or abnormalities are a source of danger to the ear, especially the purulent forms of children, and the dangers should be explained to parents. Nasal obstructions, whether due to septal deformities, tumors or hypertrophies, tend to create diseases of the ear and the obstruction should be removed. Scarletina, measles, etc., may cause a destruction of hearing if neglected; but if taken care of in time, a cure can be effected in nearly every case.

The author concludes by saying, that it should become the duty of school boards to have a competent physician test the hearing of school children, especially in the public schools.

A SIMPLE AND SAFE OPERATION ON THE FRONTAL SINUS BY THE INTRANASAL ROUTE.—Good (*Jour. Amer. Med. Assn.*, Aug. 31, 1907).—In the author's operation on the frontal sinus by the intranasal route, he

begins by anesthetizing the entire olfactory region, the bulla ethmoidalis and unciform plate, by means of a cotton swab moistened with 1-1000 adrenalin, then dipped into cocaine crystals which are rubbed into the mucous membrane. The middle turbinate is then removed by the ordinary method and the processus uncinatus removed with a chisel. He next injects into the frontal sinus a half drachm of 10 per cent cocaine in 1-1000 adrenalin, placing a cotton pledget over the infundibulum to take up the cocaine as it returns.

A protector is now inserted into the sinus and a part of the processus frontalis of the superior maxillary bone, as well as a part of the spina frontalis of the frontal bone and the anterior medial wall of the labyrinth ethmoidalis, are chiseled through and removed with forceps or curette. The anterior ethmoidal cells are removed with a curette; a frontal sinus rasp is introduced and the spina frontalis is rasped out, as well as the frontal accessory ethmoidal cells, if present. The sinus is then curetted with flexible curettes and diseased membrane removed, after which it is packed with sterile gauze soaked in carbolyzed petrolatum and oil of cloves. In twenty-four hours the packing is removed and the patient is left alone.

The author states that in this operation there is absolutely no danger to the intra-cranial structures, and the most that could happen would be to rasp through the orbital wall; but this can be avoided by an assistant putting his finger into the orbit.

THE RELATION OF THE DENTAL ARCHES TO PATHOLOGIC AFFECTIONS OF THE NASO-PHARYNX AND ADJACENT PARTS.—Bogue (*Jour. Amer. Med. Assn.*, July 13, 1907).—The author says that the intimate relation between conditions in the naso-pharynx and the arrangement and development of human dental arches, has just begun to be understood. He has found by clinical experience that when irregular teeth and narrow dental arches are found with the characteristic adenoid physiognomy, we expect in nearly all cases to find not only nasal stenosis, but that the irregularity of the teeth is in proportion to the degree of deflection in the nasal septum and diminution in the nasal passages. He says that the tongue within, and the cheeks and lips without, are the main instrumentalities in the formation of the dental arches, and that in mouth-breathers the tongue, which is a powerful muscular organ, is withdrawn from the roof of the mouth, thereby permitting not only a narrowing of the arch, but causing the eruptive forces of the teeth to be expanded in an antero-posterior direction. From the beginning of mouth-breathing, lateral growth is almost excluded till relief is afforded by surgical means, directed toward the removal of adenoids and enlarged tonsils, and the application of an expansion arch to the teeth.

The author says in conclusion, that if these corrections are instituted at an early age, about sixth or seventh year; the tendency is towards a normal enlargement and development, not only of the upper jaw and nasal passages, but of the bones lying above, thus insuring greater regularity in size and position of antrum and other sinuses, and that if the deciduous teeth are moved into their proper positions, crypts of the permanent teeth will necessarily be carried into proper position.

MEDICAL LAW AND MEDICAL JURISPRUDENCE.

IN CHARGE OF
IRVIN V. BARTH, LL. B.

MANDAMUS TO COMPEL EXAMINATION UNDER MISSOURI DENTAL ACT.
—State ex rel. Crandall vs. McIntosh, et al., Board of Dental Examiners,
(*Supreme Court of Missouri*, July, 1907), 103 S. W. 1078.

This was an original proceeding by mandamus by the State on relation of U. G. Crandall vs. R. D. McIntosh, et al., composing the Missouri State Board of Dental Examiners. The writ was directed against the members of the Board to compel them to allow the relator to stand the test of an examination as to his qualifications to practice dentistry in the State of Missouri under and by virtue of the Dental Law of 1905. That law required an applicant for examination to have had either a license from the Dental Board of another state or "a diploma from the faculty of some reputable dental college duly organized under the laws of this or any other state of the United States." The relator had neither qualification to require the examination so far as the terms of the Dental Law are concerned. This appears further from his petition to the Board, as follows:

"The undersigned respectfully represents to your honorable body that he is of good moral character and possesses sufficient knowledge, experience and practice to successfully pass an examination to authorize your honorable body to issue to him a license to practice dentistry in the State of Missouri, and, in addition to possessing the necessary knowledge to pass an examination that would entitle him to a license, applicant has had many years experience in the practice of dentistry. Your petitioner states that he has no diploma from a college, that he has not been licensed to practice dentistry in the State of Missouri at any time, and that he has not been licensed in any other state in the United States for the practice of dentistry. Your petitioner therefore respectfully prays the Board to make an examination as to his qualifications and knowledge of dentistry, so that a license may be issued, entitling your petitioner to practice dentistry in the State of Missouri."

The application was denied by the Board and the mandamus proceedings were accordingly instituted. The relator grounded his relief upon the unconstitutionality of the Dental Law in several respects, as in his petition indicated. The court denied the writ and in the course of its opinion passed upon the following questions:

First: The relator being a citizen of Missouri could not claim that the act was unconstitutional because it discriminated against citizens of other states. "Courts do not go out of their way to declare a statute unconstitutional."

Second: Since relator bases his right upon the unconstitutionality of the Dental Law, he cannot in the same breath urge its constitutionality in his attempt to require the Dental Board, under the act of 1905, by mandamus to give to him an examination.

Third: Mandamus should not issue where the right to relief is not clear.

Fourth: Relator is barred by laches from relief by mandamus.

Fifth: The Dental Act of 1905 is constitutional in its requirements.

NOTE. The principal case becomes of importance to the medical profession generally in view of the amendment to the medical practice act, passed at the last session of the Missouri Legislature, raising the requirements for the practice of medicine and surgery in this State. The medical amendment of 1907 is practically on-all-fours with the requirements as embraced in the Dental Law of 1905, under which the above mandamus proceedings were brought. The amended medical law now provides in part as follows:

"All persons appearing for examination shall make application in writing to the Secretary of said Board thirty days before the meeting. They shall furnish satisfactory evidence of their preliminary qualifications, to wit: a certificate of graduation from an accredited high school or state normal school, college, university or academy, a certificate from the county school commissioner certifying that they have satisfactorily passed an examination equivalent to a grade from an accredited high school, or state normal school, college, university or academy. They shall also furnish satisfactory evidence of having received diploma from some reputable medical college of four years' requirements at the time of graduation," etc.

It is unfortunate that the principal case does not present a direct decision on the constitutionality of the Dental Law. What the court has to say in regard to its constitutionality is *obiter dictum*. As representing, however, the view of Judge Lamm, at least, who wrote the opinion, this dictum is of interest. The learned judge says:

"While not necessary to a decision of the case, it is not entirely amiss to say that relator's counsel with impassioned eloquence assail that provision of the act of 1905 requiring an applicant for examination to have a diploma from the faculty of some reputable dental college, etc. The argument proceeds on the assumption that knowledge is the main thing, and that the State has no business with the mere method of acquiring that knowledge. It may be conceded that knowledge in the science of dental surgery is the main thing—the capital desideratum; but the argument blinks a major fact, viz., that the State is vitally interested in another thing, to wit, that its governmental agency, having in charge the subject matter, to wit, the Board of Dental Examiners, should themselves have knowledge of that knowledge. The plan adopted by the statute for attaining that sensible end was that, in the first place, the applicant should have a diploma, or a certificate from the dental board of another state; and, in the second place, should stand an examination. * * * A certificate from the faculty of a college attesting that its bearer as a student, day in and day out, with scholarly patience and research, had equipped himself with the technical knowledge taught in such college as contemplated by the foregoing statute, is of pronounced significance. It comes from the hands of honorable and competent men; it pledges the honor of the college that its holder attended lectures, possessed himself of the learning of his text-books, passed his term and final examinations with credit under the eye of his preceptors, and was capable of rendering professional services to the people in accordance with the rules of his art; that he was, in

the language of *State ex rel. v. Gregory, supra*, no pretender, no 'empiric, mountebank, charlatan, or quack.' It is manifest that no practicable examination by a dental board could go quite so deep or be so searchingly broad in meaning as an honest, well-earned diploma of that sort. The law places its benediction on such a diploma, assigning it no trifling office, and public sentiment tends to support that theory. The law says it may be received in evidence by the Board as standing for all it is worth; and then the Board, by way of check and as a cap-sheaf on the statutory scheme, may examine the applicant to see whether the seeds of information sown in his mind as a student fell by the wayside, or fell on stony ground or had been lost by forgetfulness as the seeds in the parable were devoured by the birds of the air. We find no legal fault with the requirement of a diploma. We find no legal fault with the requirement of an examination by the Board. We find no legal fault with the legislative theory that it was largely impracticable for an applicant to acquire in the first instance suitable skill in technique and adequate professional knowledge by himself or in an office. The line has to be drawn somewhere, and, so long as it was not chalked out whimsically and arbitrarily at an unreasonable place, it was well enough—the legislature having plenary power."

Judge Burgess concurred with Lamm, J., in his opinion. Chief Justice Gantt and Judges Fox and Graves concurred in the result and offered no opinion upon the constitutionality of the act, as above set forth. Judge Valliant dissented from the remarks of Judge Lamm upon the constitutionality of the act, and Judge Woodson did not sit. It is clear, therefore, that the case does not afford anything more than an opportunity for speculating upon the judgment of the court in the event that this amendment to the Medical Practice Act comes before that tribunal. Indeed, with deference to the learned judge, who gave the opinion, it is inconceivable why the constitutionality of the act should have been passed upon at all. The case could have been decided entirely upon the proposition that relator was assuming an inconsistent attitude in striking at the constitutionality of the act, when to justify his prayer for mandamus he must at the same time allege that the act is constitutional.

CORRESPONDENCE.

LONDON LETTER.

[FROM OUR OWN CORRESPONDENT.]

The session of Parliament lately concluded, enacted some measures which present certain features of interest to the medical profession. In future all children attending the public elementary schools will be submitted to regular medical inspection. This should have a notable effect in checking the spread of infectious diseases of all sorts, and will insure that defects of sight, teeth and of other important organs, shall be pointed out so that they may receive appropriate treatment. Logically, such a course of procedure should be the rule in every school, as was fully demonstrated the other day at the International Congress on School Hygiene. Logical developments, though meeting with general approval as abstract propositions, are not much in favor in the concrete, and take some time to eventuate. In time, no doubt, the matter of school inspection will become a special branch like public health. There are obvious difficulties, in point of fact positive disadvantages, in combining the position of a medical inspector with that of a general practitioner.

Another bill deals with the much-vexed question of vaccination, and an eminently reasonable conclusion has been reached, which bids fair to end the greater part of the controversy on the subject. The "conscientious objector" can now make a statutory declaration of his conscientious objection to the vaccination of his child before a magistrate, instead of applying to the magistrate in open court for a certificate of exemption. This very effectually deprives the strenuous anti-vaccinator of any chance of obtaining notoriety, on which unwholesome diet the movement had to a large extent been nurtured, and with this disappears all excuse for posing as a martyr. The previous act by repealing the penalties which formerly attached to refusal, had already removed most of the excuse with the result that vaccinations actually increased. The only compulsion now remaining, the declaration of objection, involves the quiet and unostentatious expenditure of a little trouble. Under these circumstances it is extremely probable that the anti-vaccination movement will, in the course of a year or two, succumb to sheer inanition.

In passing a bill to insure the early notification of births, the present state of affairs in this respect in this country being in urgent need of reform, a most unfair advantage had been taken by the legislature of the readiness invariably displayed by the medical profession in furthering humanitarian effort, even at the cost of their own interests. Such a position, it may be remarked, is never to any noticeable extent associated with either the clerical or the legal profession. Not content with imposing upon the medical attendant the duty, without fee,

of notifying the fact of a birth, the neglect so to do has been made punishable by summons to a police-court and imposition of a fine. An attempt has been made to gild the pill by enacting that the registration authorities shall provide stamped and addressed post-cards free. The bill was introduced by a barrister, Lord Robert Cecil, son to the late Marquis of Salisbury, and although, so far as the penal clauses were concerned, it was opposed vehemently by the mere handful of medical men having seats in the House of Commons, this opposition was jockeyed out of the running with great "slimness." Had the position been reversed upon some matter which trench, even in the slightest degree, upon the sacred interests of the legal profession, one can easily imagine the torrents of invective which would have been forthcoming from Lord Robert and the other members of his profession, who may be said to teem in one House and overflow into the other. As it is, credit has been obtained for an act of philanthropy which, however, being at other people's expense cheap and certainly bears the hall-mark usual to such commodities.

Centenarians are by no means uncommonly met with nowadays, but a centenarian physician, especially one who has borne the heat and burden of the day in work in London, is certainly *rara avis*. Sir Henry Pitman has just entered upon his hundredth year, and received numerous congratulations. He was for many years a well known figure in London medical life, as he was Registrar of the Royal College of Physicians of London until 1889, when he became Emeritus Registrar. He was physician to St. George's Hospital, and lectured there on the principles and practice of medicine. He still remains on the staff of the hospital, being the Senior Consulting Physician. He is a most interesting link with the past, for he took his B. A. at Cambridge as long ago as 1831, and had proceeded to his doctor's degree before our present King was born. Junior in years to Sir Henry, is another "Grand Old Man" in medicine, Sir Samuel Wilks, who left London for the breezy heights of Hapstead when he put off the robes of President of the College of Physicians, the highest and most honorable office attainable by a physician in this country. In his well earned leisure Sir Samuel continues to take the keenest interest in everything connected with the profession he so greatly adorned, physically as well as intellectually and scientifically. It is the pride and glory of the Pupil's Physical Society at Guy's Hospital, one of the oldest medical societies in London, that he is still their President and almost invariably takes the chair at the opening and closing meetings of each annual session. His speeches on these occasions are always intellectual treats, and although he deprecates his continuance in office, claiming his only right to remain there is the fact that he is still a student and anxious to learn more, his presidentship affords him infinite and abiding pleasure by maintaining his active connection with the Hospital and School he loves so well, in which and for which he accomplished such great and lasting renown.

October sees the Medical Schools in London getting into the full swing of the work of the winter session. As it is the beginning of the academical year, the "new entries" make their bow on the threshold

of the arena in which the struggle for existence ever grows more keen. The opening of a new year is celebrated by a function of one sort or another at most of the schools. The foretime introductory lecture has in several instances been replaced by a "Past and Present" dinner. Here meet together upon the common ground of unwavering affection for their Alma Mater, the eminent consultant, the rising specialist, the general practitioner and the service man, comparing notes from all quarters of the world. At all such gatherings reminiscences are naturally much in evidence, and in listening to these the "Present" may begin to realize that learned professors, of whom perhaps they stand not a little in awe, were and are "very much like other fellows."

September 21st.

PARIS LETTER.

(FROM OUR OWN CORRESPONDENT.)

LATEST ASPECTS OF HYSTERIA.

Medical doctrines are subservient to the laws of evolution and even those doctrines which one believes to be firmly established are subject to evolutionary changes. This is illustrated in Charcot's case, for although following his studies in hysteria, the teachings of the Salpêtrière school became a dogma, the Charcot conception of the malady is no longer accepted. For the ancient uterine theory, Lepois, Willis and Sydenham, to mention only the most illustrious authors, substituted the theory of a cerebral, or general derangement, with nervous crises and a multiple symptomatology accompanying each crisis. Amplifying this point of view, Charcot and his pupils described a new syndrome and made hysteria a morbid, proteiform entity, capable of simulating all symptoms as well as all maladies.

But, ere long, the beautiful edifice erected by Charcot showed signs of crumbling away. There can be no doubt that the clinical facts observed lost none of their original value, but the Charcot idea of hysteria could not hold its own against the onslaught of discussion. "The malady hysteria," said Professor Bernheim of Nancy, "as described by Charcot, does not exist." By attributing to a pretended malady called hysteria, innumerable and diverse inco-ordinating symptoms which might possibly accompany hysterical crises, by gravitating all these symptoms around a crisis, by amalgamating with hysteria all sorts of maladies, nervous, organic, toxic, psychic, a very diverse syndrome the same in subjects without crises as well as in subjects with crises, was described. Truly, the protagonist of the Nancy school was not far from wrong when he said that here was a morbid, monstrous artificial entity, created from many sources.

How then does Bernheim explain the disease and how are the crises which constitute it developed? In both men and women, a strong emotion (terror, anger, chagrin, grief, etc.) manifests itself by variable symptoms as regards form, duration and intensity; in some, there is an epigastric constriction with sensation of globus hystericus, thoracic distress, tonic or clonic convulsions; in others, there is a loss of consciousness with contraction of the limbs, trismus, etc. These

symptoms, coming on suddenly, and seemingly an attack, are only the exaggeration of psycho-dynamic disturbances which we all manifest more or less in consequence of certain emotions. They are, in reality, indications of crises which never come to a head. If the emotion of reaction under certain influences (organic predisposition, moral depression, menstruation) attain the proportion of a crisis, reproduction is impossible and the occurrence must be looked upon as a mere accident. In other cases, the crisis is not limited to one attack; it recurs each time an analogous emotion is present, or even as a result of auto-suggestion brought on by an emotional remembrance of a crisis. This aptitude of the organism to realize a crisis constitutes a true hysterical diathesis. The hysterical aptitude is, moreover, not in proportion to the nervousness of the subject. Therefore, to have an hysterical crisis it is not necessary to be hysterical. The subjects in which the hysterical diathesis is developed may be in good condition in the intervals, have no stigmata, no untoward manifestations. But, on the other hand, they do present at times certain nervous perturbations.

Taking the above facts into consideration, the single crisis or the diathesis is due to an emotivity produced by external causes while the hysterogenic emotion is due to organic causes; if the latter obtains, the crisis is then associated with a disease. One would be in the wrong always to class, as M. Bernheim does, under the name of hysteria, not only all the functional troubles due to an emotion which has provoked them at the time of a crisis, but also the symptomatology of different diseases upon which hysteria has grafted itself. If this were done, hysteria would become a polymorphic malady which could simulate all diseases.

As to the stigmata, such as the contraction of the visual field, the sensitivo-sensorial hemi-anesthesia, M. Bernheim declares they have no spontaneous existence and that they are created artificially by suggestion whilst the physician is making medical investigations. Thus we see that hysteria is nothing more than a crisis: the first crisis being emotional and the crises which follow having their origin in auto-suggestion. One may ask why the first crisis does not come on unexpectedly as do the crises which are prompted by auto-suggestion. This thought suggests to the student that M. Bernheim's conception of the disease is not entirely satisfactory, despite the authority and learning of that scientific investigator.

One of Charcot's most distinguished disciples, M. Babinski, has given us a much more comprehensive definition of hysteria, one which, strange to say, is diametrically opposed to the teachings of M. Bernheim. According to M. Babinski, hysteria is independent of auto-suggestion, the hysterical manifestations being characterized by the possibility of reproducing themselves with a vigorous exactitude and then disappearing under the influence of persuasion. In other words, to use the neologism created by M. Babinski, we have here the "*phenomenes pithiatiques*." M. Babinski admits the part played by suggestion in the artificial creation of stigmata, and in this respect his teachings are similar to those of M. Bernheim. In connection with the "*troubles pithiatiques*," what place should we reserve for phenomena that suggestion cannot create (oedema, hemorrhages, fever)? M. Babinski states that between these two classes

of facts there is the relation of cause and effect. He also asserts that the term hysteria should be used only in describing "troubles pithiatiques." As regards the nature of the malady he is of the opinion that suggestion, auto-suggestion and sub-conscious simulation best explain the hysterical phenomena.

What conclusion ought we to draw from these facts? It can readily be seen that if one is not prepared to give a satisfactory definition of hysteria, the reason for this is that as yet a complete unanimity as regards the exact limits of this disease, the extent of the manifestations which have been imputed to it, is lacking. As to the exact nature of hysteria, the best one can say today is that it is purely hypothetical. But this should not affect our interest in the opposite currents of thought at present advocated by two conscientious and authoritative observers in their desire to get at a true conception of the much-discussed disease—hysteria.

September, 19th.

OBITER DICTA FROM FOREIGN JOURNALS.

HYSTERIA AND EVOLUTION.

Imprimis, it is well to remember that at present there is a tendency to withhold from hysteria, the designation of a morbid entity. Instead, it is defined as a modality of psychic changes which are included in the term, psychoneurosis. This tendency, says Schnyder in *Le Bulletin Medical*, is evidenced in Babinski's definition in Crocq's, which runs as follows:—"Hysteria is a psychopathological state characterized by hyper-impressionability, diminution of cerebral control and hyper-suggestibility;" and in the ideas of Professor Dubois. In those instances where writers regard hysteria still as a special disease, there seems to be a desire to attribute to it an anatomical substratum, a particular cerebral localization.

To generalize, one may say that the hysterical modification of the mentality has its point of departure in a faulty judgment which leads to erroneous conceptions of real situations, and a lack of adaptation to them. Hysteria is above all else, a disease peculiar to the evolution of the human mind; it illustrates a break in the mental development. This sort of hysteria is as common among young individuals as among children but it is rarely encountered among the aged, because their mentality has gone through all the processes of evolution. In spite of certain analogies, one should not class the mentality of the aged with that of the child, because the latter has imaginative powers and desires unknown to the former. Likewise, it would be easy to demonstrate that

hysteria is co-eval with the evolutionary phases in the history of humanity. It appears in history each time the aspirations of the human mind are limited and repressed by stringent laws and established order, during the periods which precede great moral, social and political revolutions. The best example of this is furnished us in the Middle Ages, which was the classic epoch of hysteria among the masses. This period in the infancy of individualism, according to an expression of Hellpach's, was opposed by the church and other conservative forces which united themselves into a formidable whole to crush humanity's efforts in its desire to achieve progress. Puissant manifestations of hysteria are never the attribute of a people having a too-refined civilization. This is Moebius' opinion. Hysteria is no more characteristic of a decadent people than of the individual whose decadence is the result of great age. It is a manifestation among individuals in whom the mentality represents a primitive period in the mental evolution of the species, such as we find among children.

Certain classes of individuals illustrate a mentality, which for the development of hysteria, is excellent ground for culture. These individuals are to be found either in the rural districts or among the proletariate classes. Among the rural population are to be encountered the simon-pure hysterics; from time to time, even, in some secluded village, an epidemic of hysteria recalls the classic features which obtained in the Middle Ages. Hysteria is the morbid psychic modification in certain individuals whose mentality is simple and naïve, and who have been transported to conditions of existence for which they lack adaptability. The quota of country girls who develop hysteria after becoming servants in large towns, is recognized by many authorities. It is not extravagant to remark that the emigration from the country to the city, necessitating as it always does, efforts on the part of the individual to adapt himself to new conditions, constitutes an important factor in the development of the hysteria of today. Hellpach states that the hysteria of the proletariat is the result of socialistic aspirations, and is so widespread that a comparison of it with the hysteria affecting the masses of the Middle Ages, is both apt and proper.

The dissatisfied and the disenchanted who are still hosts to the simplicity of the psychic reactions of the child, have but one way of declaring their inability to cope with the exigencies of life—that is, by developing hysteria.

BOOK REVIEWS.

CHIRURGIE DES PRAKTISCHEN ARZTES. Herausgegeben von Professor Ebstein in Goettingen und Professor Schwalbe in Berlin. In zwei Baenden. Preis: 20 Mark. Verlag von Ferdinand Enke in Stuttgart.

This work represents a supplement volume to the "Handbuch der praktischen Medizin," edited by the same writers. In this "Handbuch" the leading thought in presenting the material was to furnish the active practitioner with a book of reference in which he could easily find the sought for information for immediate application in the special case. In applying this same idea to a text-book of surgery the editors had to discard the customary form of such books and have arranged the material according to organs. Thus the volume begins with an article by Fraenkel on the surgery of the head and vertebral column. Tilmann devotes sixty pages to the surgery of the nervous system. Hess of the University of Wuerzburg, contributes the article on diseases of the eye, Kuemmel on diseases of the ear. There are essays on the surgery of the face, nose, mouth, etc., by Leser, and a brief expose of the diseases of the teeth by Scheff of Vienna. We find among the contributors to this interesting volume Ledderhose, Garre, Mueller, Kuemmel of Hamburg, with an article on the surgery of the male genital organs, and also Kroenig of Berlin, who deals with the surgery of the vascular system.

The volume is well illustrated and must be regarded a most important and interesting addition to our surgical literature.

INTERSTATE MEDICAL JOURNAL

PUBLISHED ON THE FIRST DAY OF EVERY MONTH BY THE
INTERSTATE MEDICAL JOURNAL COMPANY

SUBSCRIPTION, \$2.00.

FOREIGN SUBSCRIPTION, \$2.50.

SINGLE COPY, 25c

Subscriptions may begin at any time. Volume ends with issue of December.

Original Articles.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. French and German articles will be received and translated free of charge, if found desirable for publication.

Reprints (200) of original articles will be furnished gratis to authors making the request, which must accompany the manuscript. Covers to these, and extra reprints, will be furnished at net cost.

Illustrations, such as plates, half-tones and zinc etchings, as in the judgement of the editors are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

Manuscripts will be returned, if stamps be sent for this purpose.

Advertisements.—First advertising form closes on the 10th of the month; last advertising form closes on the 15th. Time should be allowed for composition of advertisements and for the sending and return of

proofs. Advertising rates will be sent on application.

Change of Address.—In ordering a change of address, it is important that both the old and new addresses be given.

Discontinuances.—The INTERSTATE MEDICAL JOURNAL is not discontinued at expiration of subscription, but is sent until an explicit order to stop is received or a notice sent by us. A large majority of our subscribers prefer not to have subscriptions interrupted and files broken in case they fail to remit before expiration. It is therefore assumed, unless notice to discontinue is received and the amount of back subscription paid to date, that the subscriber wishes no interruption in his series. Journals returned are not notice of discontinuance.

Remittances should be made by check, draft registered letter, money or express order. Address all communications to INTERSTATE MEDICAL JOURNAL, Linmar Building, St. Louis, Mo.

INTERSTATE MEDICAL JOURNAL.

VOL. XIV.

NOVEMBER, 1907.

No. 11

EDITORIAL.

ON THE COMPOSITION OF MEDICAL PAPERS.

After many years of polite endurance on our part to the tenebrously obscure style of medical papers, an Englishman has at last voiced the sentiments of those who have longed for simplicity and clarity, by publishing a book containing many ideas as to how a scientific paper ought to be prepared so that the English language undefiled may have a chance to assert its time-honored rights. The book in question is by Dr. T. Clifford Allbutt, no mean authority we should add, and bears the prolix title "Notes on the Composition of Scientific Papers." It is compact of good sense and good ideas, and it ought to mean much to him whose modesty has made him aware that his multitudinous medical papers have been a failure on account of an exasperating tautology, and the unwise introduction of Latin and Greek words and phrases. But since modesty has never been a burdensome quality of the American writer of medical papers we are not amiss in saying that small profit will come from Dr. Allbutt's preachings, despite their serious intent and undeniable import, to those hundreds of makers of medical papers whose hands, while devoid of the desired literary cunning have, nevertheless, the irrepressible itch for writing. This pessimistic view is prompted by the fact that books on similar subjects have left no impress on the medical mind; from which we infer that of all minds the medical is about the least sensitive to the newer literary canons promulgated by recognized purveyors in our best literary journals and is so decidedly steeped in the fuliginous atmosphere of the medical writers of the early fifties, that to entertain a ray of hope for directness, terseness and brevity must be ranked among the great puerilities of the age.

Kinglake in "Eothen" says, "An Englishman journeying in the East must necessarily have with him Dragomen capable of interpreting the Oriental language," and the same might be said of the gentle reader of our medical journals, who of an evening promises himself a scientific treat, only to find the bastard Johnsonian English with its many Latin and German incrustations a weariness to the soul and an instigator of mental distress. Even though his qualities as a linguist stand him in

good stead, each foreign word or phrase must strike him as a foolish incursion that has but one object—the weakening of the mother tongue with its attendant confusions, and a cloaking of the scientific spirit. Well might he say with Browning: “Although I take your meaning, ’tis with such a heavy mind,” but even this apt quotation will not prevent him from experiencing a sense of disgust with the writer for seducing him into reading an article of unnecessary ponderosity, when a slight regard for the literary tenets of the day would have done much to make the reading a pleasure and a gain.

So long as medical papers are composed with a lordly disregard for the literary “dress,” and with a complacent superiority on the part of the writer for the reader, the change we desire cannot take place. Of course, simplicity would curtail verbosity considerably, and clarity would do much to strip modern medical papers of the false pedantry which now clutters them. These qualities may be considered disadvantageous by writers who stand in fear lest their papers might be ranked with the purely scientific and literary productions in our best journals, but the sooner the lesson of normal literary values is learned, the greater will be the honors accorded. Because a medical paper can be easily read and understood is no indictment against its worth and value; rather should it be a matter for congratulation that any essay bearing on the science of medicine is free from the medievalism which unfortunately has always been a concomitant of the inexact sciences.

Machiavelli tells the following story of Catherine Sforza in the citadel of Forli: “Surrender or we slay your children, which we hold as hostages,” cried the besiegers. “Kill them if you like. I can breed more to avenge them.” The papers as composed for our medical journals today seem to be born with the same ease and in the same spirit of revenge which characterize Catherine Sforza’s words. Let us hope that after our criticism the overweening love of the medical aspirant for literary honors will have longer periods of barrenness.

IMPORTANCE OF THE CLINICAL LABORATORY.

Until very recently the work of the clinical laboratory, especially with regard to its value in diagnosis, has been unduly magnified at the expense of other well established methods of this art. The brilliant results obtained from the discovery of improved laboratory technique have been among the marvelous achievements in the development of clinical medicine. Yet the overestimation of these results, especially by those who do not understand their application, and the optimistic claims by a few enthusiastic laboratory workers, have created for the methods of the clinical laboratory transcendent values which they really do not merit. The reaction from these influences has recently been felt by the medical

profession of this country. The last Congress of American Physicians and Surgeons considered this subject in a symposium on "The Relative Value of Laboratory and Clinical Methods in Diagnosis." Noted American clinicians, Herrick,¹ Holt,² Cabot,³ Emerson,⁴ some of whom are authority with regard to laboratory findings, have written extensively to correct these impressions of the medical profession of today.

Mistaken notions which have existed regarding the value of laboratory diagnosis have been properly aired by these discussions and their import and remedy should be seriously considered by every practitioner. The causes at the base of this condition are due to four important factors: First, mistakes of the laboratory; second, faulty interpretation of laboratory findings; third, lack of clinical experience and observation on the part of the laboratory man, and fourth, improper relationship between the laboratory expert and the clinician. Mistakes of the laboratory consist of incompetency, failure on the part of the laboratory to acknowledge its limitation, the absence of the realization of the personal responsibility of the laboratory diagnosis, and the tendency to make diagnoses from laboratory findings alone. The faulty interpretation of laboratory findings is due rather to the shortcomings of the general practitioner than to laboratory methods. Men untrained in laboratory work are especially ignorant as to the limitations of clinical laboratory means. The absence, for instance, of the positive Widal reaction during the first week of the disease is mistaken to exclude typhoid. The negative finding of plasmodia in the blood or tubercle bacilli in the sputum from a single careful examination is all that is considered necessary for a negative diagnosis of malaria or tuberculosis. The absence of the leucocyte count is taken to indicate the absence of a pus infection, while we know that the leucocytosis merely measures the resistance of the patient, and when this resistance is low, as in the most severe pus infections, leucocytosis is absent. The negative findings of Klebs-Loeffler bacillus from a culture taken from the pharynx allows a diphtheria infection of the larynx or bronchi to proceed to a fatal termination without treatment. The limitation of pathological diagnosis of kidney diseases from urine was pointed out clearly by Cabot in his comparison of urinary analysis with post-mortem findings. He demonstrated, for instance, how the most severe and fatal types of parenchymetous nephritis (glomerular nephritis) produced no albumin in the urine. Others have practically established the fact that cardiovascular findings, even with a practically negative urine, were the cardinal signs in interstitial nephritis. The absence of the knowledge of laboratory limitations is most conspicuously exhibited on

1. Oration on Medicine at the 58th Annual Session of the American Medical Association.

2. Medical Tendencies and Medical Ideas (Jour. A. M. A.).

3. Limitation of the Urinary Diagnosis (Jour. A. M. A., March 18-25, 1905).

4. Bulletin Johns Hopkins, Jan. 1903, XIV, No. 142.

the part of the general practitioner by the specimens presented by him for diagnostic purposes. A piece of shriveled tissue taken at random from a growth is sent to the laboratory without other data for a diagnosis upon which depends perhaps a serious operation. A drop of dried blood is presented for a complete blood examination. A patient is sent to a Roentgenologist for a photograph of gall stone, or cyst of abdomen. The lack of clinical observation on the part of the laboratory man accounts for a great many of the mistakes coming from the clinical laboratory. Too frequently laboratory diagnosis is turned over to incompetent students and young graduates whose inexperience in laboratory technique, coupled with the lack of the opportunity of getting the other important clinical data concerning the specimens examined, is enough excuse for the unreliable diagnosis. Working independently in the laboratory, without any other knowledge of the patient, they are too prone to draw positive conclusions from only probable findings. And in order to retain the high esteem of the clinician submitting the specimens they overstep their province and make a positive diagnosis instead of merely reporting their findings. Because the urine contains a small amount of albumin and numerous leucocytes, the diagnosis of cystitis is ventured without inquiring whether the urine was from a female, and whether or not it was a catheterized specimen or one probably containing vaginal discharge. An acidity or hyperacidity of the stomach contents has frequently been the sole basis for a diagnosis of carcinoma or ulcer of the stomach. The reduction of copper sulphate solution by urine has misled the general practitioner to give a bad prognosis, when that reduction was due to a little chloroform added to the urine as a preservative. Nothing has done more to place the laboratory methods in general bad repute than this lack of inquiry, or a demand by the laboratory man to have all the clinical data at his command before giving an opinion upon his own findings. Physical and laboratory findings are to be studied and compared. This can not be done either in the laboratory or at the bedside alone. Nor do even these two places of investigation complete the needed observation for the finished clinician. He must be a constant attendant of the operating and autopsy room. Two European clinicians of prominence who are versed as well in the theoretical as the practical side of laboratory work speak as follows: Romberg⁵ said: "For the internist, pathological anatomy is even today indispensable. A thorough study of pathological anatomy is the best rule for the diagnostician." Neusser⁶ speaks of pathological anatomy as "the mistress of our diagnostic art," and says a little later concerning the value of a control of our clinical work that "the dead speak a language and this language brings to the intelligent physician, at the bedside of his patient, calm satis-

5. *Erfahrung und Wissenschaft*, 1905.

6. *Ueber Diagnostik und Therapie in der inneren Medicin*, Vienna, 1893.

faction and lends him strength and accuracy." Strumpell⁷ regrets the error made by the modern physicians in neglecting the fine art of observation, painstaking attention to the minutest changes, and the careful consideration of all anamnestic statements of the patients, and adds that while employing the newer methods of examination he should not allow pure clinical observation to fall into disuse. The laboratory man can no more be in ignorance of the clinical aspects of a case than can the clinician be of the clinical laboratory work. This, then, properly leads up to the most important factor regarding the most satisfactory use of laboratory findings as an aid to diagnosis. The accomplishment of the highest efficiency of the clinical laboratory will be obtained when there is the proper relationship existing between the worker in the clinical laboratory and the practitioner, providing the practitioner does not do his clinical laboratory work. The laboratory man should be a consultant, with all of the privileges that an ethical consultation includes. All the information obtainable from the anamnesis, physical examination, course of the case, etc., should be placed at his personal disposal and investigation before he should be asked or even would venture to give an opinion upon any important laboratory finding. He should be allowed a reasonable consulting fee for his opinion, not merely a fee for making a special examination. On the other hand the practitioner should personally investigate and observe all laboratory findings in order to be in a position to properly fulfill responsibilities placed upon him.

THE DIET OF THE SICK—A STUDY IN NATIONALISM.

Among the important forces which go to the making of a world's power, nationalism, according to the thinkers who have concentrated their mental powers on the subject, is the greatest of all. By its adoption and dissemination among a people the proper ferment is introduced to prevent stagnation; and when progress is the watchword of a nation, who shall gainsay its physical and mental growth. The world to-day knows what Germany owes to Ferdinand Lasalle for the Germanic idea, to what extent England is indebted to John Bright and Herbert Spencer for her best British traits, and what French philosophers of nationalistic tendencies have recently done to tear France from her medieval moorings and place her before the world as a progressive intellectual power, when the rank and file in English-speaking countries thought her a pitifully weak and decadent nation..

Now what has all this to do with the diet of the sick? To the medical pundits whose range of vision has been narrowed down to something infinitesimal by the exaggerated appreciation and adulation of their pa-

7. Eröffnungsrede zum XXIII Kongress für innere Medizin in München Deutsch. med. Wochschr., 1906, XXXXII, No. 18, page 726.

tients, making them averse to all the broadening effects which should enter into their mental make-up, the subject of nationalism as an inherent part in the conduct of all their patients, in so far as it may, and, to be more emphatic, should affect the subject of dietetics, will seem superfluous. If it were possible to convince these pundits of the many errors of which they are guilty because of their neglect in considering the vital subject of nationalistic traits on the part of their patients, traits which make for abhorrence of many foods ordered or prescribed, the matter of nationalism as a potency for good or for bad in the sick-room would soon be understood. Health, as we all know, is a normal condition whose behests though imperious are graciously granted by laymen and physicians for reasons which, while they may be far removed from scientific thought, are nevertheless tinged, unwittingly, by the spirit of nationalism. In other words, when a healthy Frenchman in the course of a conversation with his American physician betrays an insuperable preference for *perdreau truffe*, *galantine de volaille*, a *demi-bouteille de vin tres-vieux de Macon ou Chablis* and *fromage de Gruyere*, over liver and bacon, ham and eggs, apple pie and cider; or an Englishman expatiates on the culinary delights of cold roast beef, Yorkshire pudding and ale, the physician never throws up his hands in holy horror and begs his friend to desist. But directly the Frenchman, the Englishman, or any other foreigner is ill with an ailment the gravity of which should not deprive him of his customary diet, the aforesaid medical pundit immediately insists on the strict observance of his peculiar ideas of dietetics. And the wrong he does his patient is enormous, for from a physiological and psychological standpoint the sudden descent from a favorite dish that the patient's nationalism has made an integral part of his daily existence, to an unpalatable something that could be concocted only in an American diet kitchen, works woe to the patient's mental and physical forces.

As yet this country is not made up of a people of decided American national traits; rather is it a composite of all the nations of the world. Therefore, the autocratic insistence on the part of the physician as to the carrying out of his ideas of dietetics indicates a crass ignorance that only the illuminating rays of an education which shall teach him the importance of considering his patient's nationalism, can dissipate. To offer any but a German of the peasant stamp Knorr's Cooked Lentil Flour, or, as Sir Thomas Browne, in "Miscellany Tracts," says, "The husks of peas, beans, or such edulious pulses;" to press on one who has been pampered by European culinary refinements, the insipid productions of our weakened culinary art, must necessarily arouse the Boanerges' ire of the fair-minded advocate of nationalism as it pertains to the sick-room, and can be combated only by a pen plucked from the wing of the dragon of the Apocalypse. Truly our progress is not such a triumph as

the medical world supposes, since Dean Swift in the "Conduct of the Allies" wrote: "We have dieted a healthy body into a consumption by plying it with physick instead of food."

SOME SALIENT POINTS IN THE TREATMENT OF TUBERCULOSIS.

The war against the ravages of tuberculosis, though its powers are limited as regards the cure of the developed infection, is nevertheless a splendid means of advancing the possibilities of protection, for its fundamental idea is based on making infection well-nigh impossible. The segregation of tuberculous persons by placing them in special institutions is today one of the important procedures utilized throughout the world to lessen the evils of infection. This procedure it is claimed is not only of benefit to each individual whilst in an institution, but its good influence—i. e., the lessons learned and habits acquired—is instrumental in changing the individual's attitude to his own family and to the people with whom he might come in contact. Tuberculosis is, in the main, a directly contagious disease, and in the majority of cases it is acquired only by personal contact with a tuberculous subject. The idea that sanatoria will have the effect of eliminating this disease cannot rationally be entertained. Tuberculous patients are not materially benefited in sanatoria; in fact, in Germany, the results have been decidedly disappointing, and, furthermore, the good effect that is said to accrue to the patient from educating him to a proper understanding of his future surroundings can have but a relatively small effect upon the ultimate solution of the problem of eliminating tuberculosis. The great majority of patients in sanatoria have been sick for years before they were taken into the institutions. During this period many persons, from constant contact with them, have had opportunities to acquire the disease; but the shortness of the interval between the patient's leaving and his death precludes much further danger from his contact with others. Thus we see that the great danger of dissemination really lies in the period anterior to the patient's admission into a sanatorium.

Considering all the attempts which are in usage today to exterminate tuberculosis—sanitation, segregation, disinfection—the real cause of the dissemination of the disease is as yet overshadowed. By this we mean the fact that in the majority of cases the diagnosis is made only in the advanced stages of the disease, and furthermore only after destructive lesions are fully developed and the tubercle bacilli demonstrated. Many individuals, despite the lack of patent indications—sputum and cough—have nevertheless been sources of infection. It is put forth by some institutions that only incipient cases are accepted, but this cannot be true for rarely are so-called cases of recent infection reported without a

statement of the finding of the tubercle bacillus and therefor are in reality of long standing. Though the disease may often be dormant, a diagnosis can nevertheless be made. The diagnosis of tuberculous infection must not be dependent on microscopic demonstrations of the bacilli, but on conditions which cannot be explained at present and which result from certain obscure disturbances. In the majority of these conditions specific reactions justify any suspicion the physicians may have. In this way open tuberculosis will gradually cease to exist and the infection of others cannot, therefore, occur.

At present the sanitary and hygienic improvements are insignificant, a fact easily understood by a study of the manner of living of the majority of mankind. To thoroughly educate the public to a proper appreciation of hygienic and sanitary rules is as yet a figment that exists only in the imagination of some optimistic minds. It rests with the medical profession to bring about the desired change, and this can be done only when physicians fully realize that the diagnosis of tuberculosis from the bacteriologic or microscopic basis must be superseded by a diagnosis from a biologic test.

If we ask for the theoretic justification of all the methods proposed or the procedures employed, we must admit that they are not based on any certain or established knowledge. The origin of the tuberculous infection, the manner in which the virus enters, and other problems, are questions that at present are being hotly discussed. The modern thought that pulmonary tuberculosis is not an inhalation infection, at least in the majority of cases, but almost always a resorption from the whole gastro-intestinal tract, with secondary location in the lungs through lymph and blood dissemination, is by no means established by conclusive experiments or clinical experience. It does not, therefore, do away with the care that should be taken to prevent inhalation of tuberculosis material, but shows that conceptions of disease, though thought to be established facts, are subject to most decided changes.

The only certain result of the immense amount of work on the subject of human tuberculosis in the last ten years is the fact that the danger of infection is the human bacillus; that the possibilities of an infection from the bacillus of the analogous disease in cattle is justified only to a degree. The evidence for the justification of this possibility has been obtained in so small a percentage of cases that it can be practically excluded in any consideration of the human disease. More important than the climatic and all of the other ways of combating the disease is the reawakening of the use of specific substances in combination with the recognized dietetic and hygienic management of the patient. The latest results of the administration of the specific products of the tubercle bacillus have been very promising; no doubt they will soon be

in the hands of every man dealing with the treatment of tuberculosis. This method can be controlled experimentally; all other methods are entirely empiric and even now have been shown to be contradictory, to some extent, to the character of a tuberculous process.

Since our sympathies are always enlisted in behalf of suffering humanity, we must perforce encourage all attempts to annihilate tuberculosis. With the advance of that sort of knowledge which shall illumine our scientific methods, our present efforts will be strengthened by experimentally established and theoretically correct facts which will be the means of assisting us to the solution of the vexed question of how best to eradicate tuberculosis.

REED, CARROLL AND LAZEAR.

The recent death of Dr. James Carroll calls to mind the work accomplished in the year 1900 by the Yellow Fever Commission in Cuba. Dr. Carroll was the sole survivor of the principal members of this board, Dr. Reed and Dr. Lazear having died since the commission accomplished its heroic work; Dr. Lazear dying from an accidental inoculation at the very beginning of the operations against this pestilence.

We are struck with the lack of general knowledge and general appreciation of the work done by Reed, Carroll and Lazear; some honor they have received, but it does not seem commensurate with the good accomplished by them. That these three men are now dead and that their names will soon be forgotten, puts us much in the frame of mind of the book of Ecclesiastes. It seems hard that their names should so soon slip from the memories of men, and that we, as medical men, should not erect a greater monument to them that might be enduring outside our musty scientific archives.

Dr. Howard Kelley has done much in his book, "Dr. Reed and Yellow Fever," but the book, written shortly after Reed's death, seems slightly premature and insufficient. It does, however, give an explicit idea of the heroism of Carroll and Lazear, who were both inoculated with the dread disease, one dying and the other sustaining serious heart lesion after his attack. In fact, both Reed and Carroll practically gave their lives to this experiment as they both died young men. Dr. Thayer, in commenting upon the death of Dr. Lazear, said: "I wish, especially for the younger men here, that I might be able to picture to you Lazear as a man and companion; quiet, retiring and modest almost to a fault. He was yet a manly man with a good, vigorous temper, well controlled, and a rare physical courage with a deep love of his profession, and an ardent desire to make adequate contributions to its advance. When the news of his sad death became known, there were those who blamed what they regarded as unjustified temerity, who felt that such risks were not

for married men. With these, I cannot agree. No man loved his family more than Lazear, but he was engaged in a great work—and he knew it—in a work where, at a moment, no substitute could take his place. Lazear saw his duty clearly and where he saw his duty, fear and doubt could not enter in. He lay down his life before the Yellow Fever Commission had well entered upon their work; so early in its career indeed that his name appears in only one of its published reports. Nevertheless, although his untimely death deprived him of his full share in the brilliant results achieved, he did heroic service in the cause." In the Johns Hopkins Hospital the following tribute to Dr. Lazear is hung: "With more than the courage and devotion of the soldier, he risked and lost his life to show how a fearful pestilence is communicated and how its ravages may be prevented."

Following the death of Lazear, with truly unfortunate suddenness came that of Walter B. Reed, the head of the commission; and lately that of James Carroll, the second in command. That these men should not have lived and have been honored, as their heroism deserves, is sad indeed. To us it seems that a greater attempt should be made to keep their names alive in the memory of man, for surely no greater bravery and self-sacrifice has been exhibited. Their courage and altruism excel that of the soldier. The account of Dr. Carroll's illness, as given by Dr. Kelley, as well as the story of Lazear's death, gives to us a thrill of pride that our nation should produce such men, for they were truly American and as Dr. Kelley says, typified our American spirit and showed that it is not necessary to obtain education in foreign lands to be truly great in the realm of science. Another thought that strikes us forcibly is our disregard and carelessness of those who deserve the name of hero. Surely a man or a group of men who gave, as President Elliott puts it, "Control over that dreadful scourge, yellow fever," deserves a place in our memories. We feel that little is known of Reed, Carroll and Lazear and we lament this ignorance. As a people we are inclined too much to

"Take the cash and let the credit go,
Nor heed the rumble of a distant drum."

PRACTICAL PHENOMENA AS THERAPEUTIC INDICATIONS IN PNEUMONIA.

Every year an autumnal discussion of the therapy of pneumonia is sure to occupy quite a large space in the pages of our medical journals. The usefulness of this may be granted, but it has not advanced our mode of treatment one step since the time when the enthusiasm of the phlebotomist was checked. If therapeutics is the most difficult of all medical sciences, then pneumonia is certainly its most inaccessible wilderness, for nothing

like a scientific clearing has yet been done in this therapeutic domain. Attempts are numerous, but every little pathway soon becomes hopelessly overgrown with contradictions.

The serious difficulty in all these discussions is that no two clinicians can agree on any definite therapeutic procedure. Some highly extoll one means; others pronounce it dangerous. Some save patients with veratrum or aconite; others believe that these depressing drugs should be avoided. Some insist they find an indication for the lowering of the blood pressure; others insist that the healing power of the body is increased by a normal tension of the circulation. Some think that tissue oxidation should be enhanced; Robin, among others, thinks it should be diminished.

A few years ago guaiacol and creosote were suggested as specifics for this disease and the use of these drugs seems to be extensive at present. A country practitioner, who has a large experience, recently assured us that he has had little trouble with his pneumonia cases since he began the use of creosote carbonate. Yet Rochester (Buffalo), declared that this treatment does not appear rational, "as it is simply adding another poison to the system of an individual in a profoundly toxic state."

When the ordinary objective symptoms were found to be unreliable indications, various investigators attempted to approach the matter from the chemical side. A study of the pre-critical condition of the blood and urine has revealed certain changes and these have been taken as guide-posts of a new therapy.

The fact that the chlorides are not excreted in the urine during pneumonia suggested that common salt may be very useful to the individual, and led to the hypodermatic administration of an isotonic salt solution. It has been especially recommended by Madison Taylor in this country. But the use of sodium chloride in this disease is old and administering it hypodermatically probably has no advantage over ingesting of it by the mouth, except in conditions of collapse.

The tremendous leucocytosis which occurs during the course of the disease has served as a suggestive phenomenon; but attempts to stimulate this change by nuclein or pilocarpin have not resulted in any signal results.

Robin, of Paris, studied the pre-critical discharge of urea and uric acid. In the defervescent period of pneumonia a discharge of a large amount of urea and uric acid takes place. He considers this phenomenon evidence not of direct oxidation, but acts of oxido-reducing hydration, which signifies the reaction of the body against the infection. In studying therapeutic agents which might stimulate this process, the metallic ferments seemed to meet the indications. The correlative chemical acts of the natural crisis is simulated by the action of metallic ferments, since these increase the out-

put of nitrogen. He suggests the use of gold, silver, platinum, palladium and manganese.

We very much fear that like the pre-critical symptoms of Sydenham, diarrhea and perspiration, the pre-critical discharge of nitrogen is only a symptom of an increase in the function of certain organs without being directly connected with those functions that generate the antipneumococcus substances.

LITERARY NOTES.

The latest annual catalogue of The Macmillan Company, which has just been issued, has been prepared in accordance with a new plan that gives it more than passing value. The catalogue contains a complete list of all books published by this company which are still in active demand, and it is especially valuable because these include the more important publications issued in the last fifty years or more by a number of the largest English publishing houses.

Masson & Cie, Paris, are about to publish Dr. V. Menard's "Etude Sur la Coxalgie." All those interested in infantile surgery will recall the writer's excellent treatise on Pott's disease. The present volume is the best work that has so far appeared in French literature on tuberculosis of the hip-joint. The author divides his subject into three parts: pathological anatomy, clinical study and treatment, and makes it a point to discuss thoroughly the diverse modality of the disease from the clinical, anatomical and therapeutic points of view.

"The Philosophy of Common Sense," containing philosophical essays and discussions, natural theology, psychology, controversies with Herbert Spencer, Huxley, Matthew Arnold, Leslie Stephen, Mr. A. J. Balfour, etc., by Frederick Harrison (Macmillan & Co.), is a book of serious thought and of considerable import to those students of medicine whose readings take them into fields other than the limited one of their chosen profession. Frederick Harrison is the rightful successor of the French Positivist philosopher, Comte, and everything that comes from his teeming brain bears the imprint of his great prototype. The present volume has all the forceful characteristics of his former efforts, and though we often decry controversies in ordinary conversation, their appearance in the literary guise with which Frederick Harrison clothes them, raises them to so high a level of controversial thought that a succession of volumes such as this would do much to stir the stagnant state in which the majority of us live.

ORIGINAL ARTICLES.

MEDICAL MEN AND THEIR INFLUENCE ON HUMAN PROGRESS.*

AN ORATION ON MEDICINE.

By GEO. F. BUTLER, M. D.

PROFESSOR AND HEAD OF THE DEPARTMENT OF THERAPEUTICS AND PROFESSOR OF PREVENTIVE AND CLINICAL MEDICINE, CHICAGO COLLEGE OF MEDICINE AND SURGERY, MEDICAL DEPARTMENT VALPARAISO UNIVERSITY.

Marcus Aurelius, the pagan poet, philosopher and emperor, said in one of his profound observations, "Make for thyself a definition or description of the thing which is presented to thee, so as to see distinctly what kind of thing it is, in its substance, in its nudity, in its complete entirety, and tell thyself its proper name, and the names of the things of which it has been compounded, and into which it will be resolved." He further says, "For nothing is so productive of elevation of mind as to be able to examine methodically and truly every object which is presented to thee in life, and always to look at things so as to see at the same time what kind of universe this is, and what kind of use everything performs in it, and what value everything has with reference to the whole, and what with reference to man, who is a citizen of the highest city, of which all other cities are like families; what each thing is and of what it is composed, and how long it is the nature of this thing to endure."

This bit of ancient wisdom, regardless of its high authority, recommends itself to me, in contemplation of my theme. The term, human progress, depends for its meaning upon many conditions affecting the mind of its translator. That which would seem progress, advance, growth, development, to one, might seem quite the reverse to another differently situated. In the ordinary acceptance of the phrase, human progress is regarded as a material thing, and limited to the expansion of man's dominion over the physical resources of earth. That which makes for increased wealth, or ease in the production of wealth, which ministers to the material comfort of society, which extends the power of man to utilize and employ physical resources or increase the effectiveness of labor, constitute progress.

To my mind, all this (and I recognize its tremendous importance) is related to real progress as the growth of a lusty stalk is related to the ripened grain which it is intended to nurture and sustain. It is impossible for me to view this subject without asking myself this question: What is "that far off, divine event toward which the whole creation moves," that event which is to be (for the process is not complete) the culmination of the process which constitutes progress?

Is it presumption to suggest that as the intelligence of man is superior to his physical body, so is the moral nature of man higher and more

*Given before the Mississippi Valley Medical Association at Columbus, Ohio, Oct. 8th, 1907.

divine than the mere exercise of his intellectual faculties? I cannot avoid the conclusion that the moral nature of man represents the culmination of creation, as we know it; and that the process we call human progression, must continue through higher planes of effort and by finer conception of justice, until there shall have evolved a race in which theories of life shall be attained and practiced that embody spiritual and moral conceptions of human and social relations beyond our present powers of thought.

From certain points of view, human progress may be regarded as the reaction between character and institutions. If character in any way determines institutions, so also do institutions affect character. Indeed, the only valid test of institutions is their effect upon character. Human progress, therefore, is an expression of human character; and the problem becomes, what has been and is to be the influence of medical men upon human institutions?

It is then with the wish, if not the hope, to indicate the influence of our profession upon this conception of human progress that I diffidently address myself to this audience.

The *Ars Muta*, the Silent Art, as Virgil calls it, deserves its name for more and other reasons than those given by the great Roman poet. It does not obtrude itself upon the eye by gigantic evidences like those of the architect or sculptor's work; it does not dazzle by blazing masses of color as does the art of the painter; it does not intoxicate the ear with deliriously sweet sounds or the exultant stimulation of ideas as do the arts of the musician and the poet. Its influences are expressed in masses of cold figures, in prosaic statistics, that are far from being as eloquent as they might of relief to human suffering conferred by the mute art of medicine. From the time it liberated man from the pall of the unknown, which hung over him in primitive days, in the childhood of the race, our art has directly and indirectly stimulated every art and science which has blessed humanity. When the Medicine Man of primeval days passed from the stage of trance and incantation to the observation of the influence of foods and their effects upon the human system, which time and experience had shown certain occultly and mystically employed materials and procedures to possess, he lifted from human intelligence, for the first time, the veil of spiritism which certain currents of thought are just now striving to replace. When the tribal healer reached the point where he believed that black bile was the bed on which the devil reposed, and that it was possible by physical medication to cast him out, there was established the alternative hypothesis which replaced occultism with science and gave a natural and rational explanation to some of the phenomena of the physical universe.

Science has beautified and purified, so far as it has gone, and transformed a pessimistic spiritism instinct with the gloom of the unknown, into a world of beauty; and with a consciousness of rigidity, eternality and universality of principle and law, has come the sense of security and the development of intelligence as applied to the interpretation of nature.

Prosaic as medicine seems to the defective, in whom sentimentality occupies the domain of esthetics and other deep emotions, it has stimulated by its broad and general culture and its outlook upon the universe, the minds of artists, poets, naturalists, political economists and scientists, in every range of human thought as well as the more elevated philanthropic principles which underlie medicine itself.

The world remembers Michael Angelo as an artist, as the greatest master mind that ever worked in plastic medium, or by the graphic line, that appeals to the sense of beauty; remembers him as a poet, as a painter, as a sculptor, as an architect, the master mind in art; but it forgets that he was so attracted by the practical, scientific side of medicine as to express its beauty in a profound treatise of Ophthalmology.

Keats, the marvelous English boy, who wrought the work of a lifetime in early youth; who had imbibed more of the Greek spirit of beauty than any of the English poets, except, perhaps, Shelley, without doubt owed much of his intellectual inspiration to his training under an Edmonton surgeon and while a medical student at St. Thomas's hospital. Here he does not stand alone.

The great word painter of heaven and hell, the poet philosopher of the middle ages, Dante, was a member of the Apothecary's Guild, as was likewise the greatest dramatist of the 19th century, Ibsen.

The constitutional principles which underlie and express English speaking conceptions of freedom, and which played an enormous part in the development of all modern representative theories of government, found a far reaching and controlling voice in the physician Locke. To him the legal recognition of human rights, expressed in the Declaration of Independence, and in the similar manifestoes of the French Revolution, were largely due. The great American thinkers who founded the Republic were all of the intellectual school and disciples of Locke. To him was also due, in large measure, the social contract of Rousseau and the arguments which made it the gospel of the French Revolution.

Quesnay, born in 1694, famous as the first physician to the King, Louis XV., was far more famous as an economist. One of the chief founders of the school of political philosophers known as the Physiocrats, he was the author of the very name "Political Economy." His "Tableau Economique," the principal manifesto of the Physiocratic school, was pronounced by the elder Mirabeau, in a passage quoted by Adam Smith, as one of the three great inventions which have contributed most to the

stability of political society; the other two being the art of writing, and the use of a medium of economic exchange.

Five of the admittedly well balanced body of statesmen who announced the Declaration of Independence, the first trituration of Locke's principles, were physicians; all of whom played a prominent part in the Revolution and in the subsequent formation of the government under which we live, as well as in medicine.

Josiah Bartlett, who founded the United States Pharmacopeia, stood high among the leaders who stamped the principles of the great science of state medicine upon the American people. Perhaps the greatest of this group was Benjamin Rush, who in state medicine as related to the study of a provision for the defective class, stands *facile princeps*. He was the first great alienist of America and his book, after more than a century, still remains of great value. Of the five, Oliver Wolcott, the great financier, long guided the fiscal destinies of the Republic with success, in a department which is now too often relegated to cheap lawyers or cheaper business men, who lack the breadth of culture and the altruism which the medical profession gives. Matthew Thornton and Lyman Hall were both prominent in the statesmanship which guided the conduct of the American Revolution.

Washington recognized that medical breadth was particularly needful in the management of an army, where disease destroyed more victims than lead and steel. For this reason he chose Dr. McHenry as his secretary of war, an example which has been followed by McKinley and Roosevelt in their promotion of Dr. Leonard Wood.

The task of the American Revolution was constructive rather than destructive. English speaking revolutions have been evolutionary rather than revolutionary. They are usually contests for the retention of existing rights and the restoration and application of old principles of justice to new economic and industrial conditions, rather than for the creation of new constitutional growths. This tendency marked all the medical men of the Revolution. Dr. Tilton, President of the State of Delaware, reformed hospital management along the modern lines of asepticism and fresh air, and checked the boodler tendencies of contractors by establishing a military pharmacopeia, the first which made its appearance in the United States.

The medical statesmen of the American Revolution were of a broader and more judicial type than those of the French. Marat, through the suspicious effects of nerve strain and diabetes, as well as through the influence of the universal continental belief in assassination as a political instrument, was led to advocate the policy of the guillotine.

"In politics," remarks Alexander Dumas, in *Monte Cristo*, "we do not kill a man; we remove an obstacle." This code, as Carlyle says, was adopted by Marat, who through the influence of his "Friend of the

People," brought into use the humane guillotine. The superficial modifications of which he speaks were those introduced by the guillotine. Of Dr. Guillotine, the inventor of the beheading machine, Carlyle says: "Singular Guillotine, respectable practitioner, doomed by a satanic destiny to the strangest immortal glory that ever kept mortal from his resting place, the bosom of oblivion. Guillotine can improve the ventilation of the hall; in all cases of medical police and hygiene, be a present aid; but greater far, he can produce his "Report on the Penal Code," and reveal therein a cunningly devised beheading machine which shall become famous. This is the product of Guillotine's endeavors, gained not without meditation and reading, which product popular gratitude or levity christens by a feminine diminutive name, as if it were his daughter, "la Guillotine." "With my machine, gentlemen, I whisk off your head in a twinkling, and you have no pain, but an agreeable freshness about the neck;" whereat all laughed. Unfortunate Doctor; for two and twenty years he shall hear nothing but guillotine; then dying, shall through long centuries wander as it were a disconsolate ghost on the wrong side of Styx and Lethe; his name likely to outlive that of Caesar!"

Another great figure that looms prominent in the French Revolution, who through his direct influence on the people and his indirect influence on the Assembly, did much to clarify the political atmosphere, was Cabanis. He was one of the first physiologic psychologists, and with Guillotine, helped to lay the foundation of criminal anthropology. He, with Franklin, Bailly and Lavoisier, made the report on mesmerism, which still dominated the scientific aspect of hypnotism. The criminology of Cabanis and Guillotine was one of the most marked of the many philanthropic activities which marked the French Revolution, which struck off the chains of the insane and taught the deaf mute to communicate with his kind.

Another medical figure of the French Revolution was Souberbeille. This intellectual giant, while he voted for the death of Marie Antoinette, "on very sound constitutional principles," compelled the improvement of her prison treatment. While a surgeon and a fanatic about lithotomy as contrasted with lithotrity, he exhibits the scientific psychologic trend which marked nearly all leading physicians of the 18th century. This trend, as well as his clinical skill, is shown in the treatment of the epidemic of dysentery which broke out in the military camp during the Reign of Terror. He removed the victims to tents, in the open air, with plenty of space between beds and tents. "Another thing which helped very much," remarks Souberbeille, "was music, which brought diversion to the minds of the patients. Every morning the military band played at nine o'clock while passing the tents." Forty years after this Souberbeille urged that music should be played in the hospital courts

on the bridges of the Hotel Dieu, twice a day, as nothing in the world could better divert the attention of the sick from their sufferings, particularly in circumstances where the mind has so much influence.

The medical element in French political advance, which originated before the French Revolution, has always maintained its impetus; as is shown in the French Medical Premiers in the Third French Republic, the greatest of whom, politically speaking, is Clemenceau. He doubtless owes much to his training under American institutions, which he received when a practicing physician in New York City, during his exile from the Empire of Napoleon the Little. In the last French Congress there were ninety-two physicians, public servants of the highest type of usefulness!

The singular immortality of Guillotine is likely to be equaled by that of an American physician. The name of one leader is attached to a beheading machine; the name of another, Maxim, is applied to a slaughterous weapon. Both these inventions, however, made for humanity. If executions must occur—"cruel and unusual punishments"—to use the words of the United States Constitution—"should be avoided, as they tend to brutalize the multitude into the enjoyment of savages around the stake." If war must be, the more terrible the slaughter in battle, the less will be the actual loss of life and the greater the human forces making for peace.

The influence of medical methods in war has but recently begun to be appreciated. Comparisons are not always odious, but no intelligent American, and in particular, no American physician, can institute comparisons between the work done by the medical staff of the army of the United States in our latest war and that of the medical staff of the Japanese army in theirs, without shame—not for himself or his profession, but for the stupid parsimony of the American people. It is true that the first reports of the phenomenal prescience of the Japanese authorities in protection of the health of troops in camp and on the march have been somewhat discredited by more recent reports; also that the results of hospital treatment, both surgical and medical, are now held to be due in part to other influences than mere skill of the medical staff; nevertheless, it must be admitted that there is an enormous field for the exercise of prevision by the medical staff of modern armies, and that as a people, the United States are not in the rank our talent and resources entitle us to hold in this respect.

One of the conditions indicating a supposed and often boasted progress in civilization is a corresponding depreciation in the value of human life, until it has come to pass that in the United States this element is actually the cheapest of all the materials out of which our self-styled "civilization" is constructed, and this not only with regard to military operations, but in the so-called arts of peace. When the Panama railroad

was built, it was figuratively stated that its every tie was laid upon the body of a man. An important element in the failure of the French to complete the Panama canal was the terrible fatality with which they had to cope, and the first provision to be made by our government, in taking over the actual work of canal construction, was to provide for the sanitation of the district.

The high moral plane developed in the practice of our art has found expression, in innumerable cases, to a degree which leads us to believe that the service of truth and the service of humanity are one. The examples of medical practitioners who have deliberately risked and even sacrificed their lives in a zeal to discover a truth that should serve mankind, have led us to believe that there is an influence in the broadening culture of the intellectual faculties imparted by this service which is reflected in a higher moral theory of life and its obligations. We have come to understand, and to appreciate more and more, the undoubted truth that man's relations to the infinite are measured by his relations to his fellow man, that the universe is one and that truth is but its plan, that if men can find this plan, and order their lives, whether as individuals or as states, in harmony and conformity with the blue print of the universe we call truth, then are these lives, so ordered, natural lives, and as medical men and scientists, we know that natural lives are wholesome lives. We who stand and wait in the service of mankind and truth, have come to know that nature is the kindest nurse and mother to all her children. We also know that she does not impart her mysteries and the secrets of her being directly to any, that only indirectly does she enlighten and instruct.

The cold, dry light of science proves, by the mere fact of our intelligence, which has been developed only by experience, projected against the background of immutable law and rigid principles, cushioned with infinite tenderness, that there is plan and intelligence in the universe; that nothing simply happens; that truth in all its aspects flows from one central illumination.

Every advance in sanitation, in hygiene, in regimen, every effort to prevent disease, to improve conditions of cities or districts, is a direct result of the interpretation of medical experience and the determination of underlying principles. Our silent art finds still an ever widening field, in which the altruism and the science of its servants are in demand.

The services of Dr. Reed in determining the etiologic relationship the stegomyia has to yellow fever, are merely an example of what we all mean and understand when we speak of these things. From immemorial time, our profession has had the well-being and happiness of mankind at heart.

Heretofore, or until recently, it may generally be said that our art has concerned itself with overcoming the effects of disease, of curing

disease when it once becomes established. Owing to our lack of knowledge concerning the nature and real cause of disease, this was only natural, and to be expected. With more recent acquisition and more definite knowledge, the hope of the profession, as well as of mankind, is directed toward the prevention of disease, and every advance toward this end, by improvement of conditions, sanitary or dietary, or of habit, has first been suggested and urged by members of our profession. In this respect we have no rivals or equals among other classes of men. Our profession stands solitary and alone, an emblem of genuine charity and usefulness.

The medical profession has taken up the question of extermination of disease-bearing insects, not merely in civilized lands, for Ethiopia has already shaken her wings to stretch them forth, and the first flight to be made is the extermination of these pests for the prevention of malaria and the dreaded sleeping sickness.

The service to civilization and human progress performed in Egypt and in the Soudan by the Egyptian Medical Service has been invaluable. Like Egypt, the Soudan depends for its prosperity almost entirely on the Nile, or rather, the Niles, and their tributaries. Dr. Beam's and the investigations of others on the waters of these streams, on the grains, salts and the gums of this region, promise for the future an immense and prosperous population in this land, and the labors of these men promise to place trade in Soudanese products on a sound basis. The commercial development of this great section must in the future be along agricultural lines, and will be ultimately based upon the work done by the Egyptian Medical Service in their investigation on water, milk, food stuffs, mineral deposits and natural products, as well as the not less scientific labors accomplished toward ascertaining the cause and determining the prevention of tropical diseases.

The researches and labors of Haffkine since 1893 are to the point. By his prophylactic treatment of cholera and his later discoveries of a serum against the plague he has shown the way to the physical redemption of India.

In the opening up of new and unknown countries we must remember the efforts of the physician explorers, Livingstone, Kane, Nansen and others. The Lancet truly says, regarding Livingstone, that his conquests were more than those of science. They were conquests of humanity.

I have referred to the development of the artistic and poetic imagination resulting from intellectual training in medicine and its allied arts. The imagination of the poet is the same force which, directed in other channels, form the inventor, the scientist and military tactician, the captain of industry, the statesman and administrator. Erasmus Darwin, the great biologist of the 18th century, who in many respects preceded and excelled his much more widely known and medically educated grand-

son, Charles Darwin, was a poet of renown, whose great works were frequently quoted.

Akenside, of "Pleasures of the Imagination" fame, was another 18th century medical poet. Another, a dramatist and a poet, replete with beautiful imagery and delicate wit, couched in peculiarly pellucid English, was Oliver Goldsmith. Sir Richard Blackmore was the first man who had the courage to raise his voice against the gross licentiousness of the drama and those products which constituted the light literature of the 18th century. Unskilled in the use of the pen, and immersed in the cares of an extensive practice, he undertook the production of a poem that should elevate and instruct, and not deprave the youthful reader. In this exalted and altruistic spirit, "Prince Arthur" was composed and published in 1695, when its author was nearly fifty years of age. "The Creation," his best poem, had such merit, that gruff old Johnson says of it: "This poem, if he had written nothing else, would have transmitted him to posterity, one of the first favorites of the English muse." Addison, the arbiter and standard of literary elegance, described the same poem as one of the most useful and noble productions in English verse.

High among literary, and yet more exalted among benevolent physicians, John Coakley Lettsom, at one time President of the Philosophic Society of London, must be named. To give the list of his services would consume all of the time allotted for this paper. To him, as much as if not more than, to any other, were due the establishment of the Philosophic Society of London; St. George's-in-the-Fields, for the Prevention of Crimes and the Reform of the Criminal Poor; the Society for the Discharge and Relief of Persons Imprisoned for Small Debts; The Asylum for the Indigent Deaf and Dumb; Institution for the Relief and Employment of Indigent Blind, and The Royal Humane Society for the Recovery of the Apparently Drowned or Dead. All these and other institutions owe their existence to his efforts and care. Although he burdened himself with those aspects of his profession which represent public interest, was so active in practice, and always had upon his table some literary work or other, he, nevertheless, found time to do an amount of labor, in establishing institutions of charity and visiting the indigent sick, that would by itself have made a reputation for an ordinary practitioner.

Even to name the men, who though eminent in our profession, are yet better known to the world by their achievements in the fields of art and literature, would absorb more time than can be given on this occasion, but I cannot refrain from allusion to a few who have studied or practiced medicine: Smollett, whose wit and wisdom have delighted the world; Crabbe, Servetus, and Goethe, who in art, philosophy and science probably represented the universal mind more nearly than any other man

of his time; Rebelais, the real founder of our present system of education, and Huxley. All these, of older days and other lands, find their antitypes in our times in Holmes, who pointed the way to abolish the scourage of puerperal fever, whose quaint pedantry, profound philosophy and delicious felicity of phrase, both in poetry and prose, was the charm of our modern Athens; in Mitchell of Philadelphia, and Warren of Boston. These and innumerable others lead us to believe that it is a peculiar influence resulting from the blend of cold, passionless science, with the philanthropy and altruism of the physician, that results in the literary charm, and the sweet charity that finds expression in the work of so many of our brothers. Evidence of the respect in which Dr. Oliver Wendell Holmes held medicine and the faith he had in its elevating influence is furnished by his remark that "Goldsmith, and even Smollett, both having studies and practiced medicine, could not by any possibility have outraged all the natural feelings of delicacy and decency as Swift and Zola have outraged them."

It is now recognized that nature's processes in all organisms approximate uniform courses. Society itself is regarded as an organism. We understand that, in the language of Spencer, only as social progress brings more numerous and varied experiences, can general ideas be evolved from special ideas, and the faculty of thinking them be acquired. Enlarged experiences, giving more abundant and varied associations of ideas, soften the rigidity of belief by multiplying the possibilities of thought. This plasticity of thought continues throughout civilization and in a large sense measures our progress, making beliefs more easily modifiable, and so promoting other changes, intellectual and social. While throughout the lower grades of intelligence, concrete objects and acts are reproduced in thought, and the imagination is thus almost exclusively reminiscent, the further development of the power of conception implies a continually wider range of thoughts, more numerous and more varied and involved, and makes possible new combinations where imagination rises into a constructive form, with an increase of originality, which tells at once upon the industrial arts, science and literature. These suggestions, by the greatest master of thinking power who ever lived among men, might have been drawn from the accomplishments of medical practitioners alone; for nowhere in the range of human accomplishments have these conclusions better foundation than among those medical men, who, as we believe, by reason of their medical training and practice, achieved such lustrous fame in other fields of activity.

Certain striking coincident crises in human history, occurring in periods of great intellectual and political ferment, would be dark indeed save for the lustre thrown upon them by the names of medical practitioners. The Golden Age of Greek philosophy and thought reflects,

down through more than twenty centuries, the glory of Hippocrates. Aristotle was the teacher of the world-conquering Alexander. Herophilus, the infallible, and Erasistratus, the sagacious, the one for his dissections, of which Tertullian accused him, and the other for his antiphlogistic treatment, are equally famous with the Ptolemys who founded the Alexandrian Library and Museum, and who ordered the Septuagint version of the Hebrew scriptures. Is there no meaning in the fact that Galen should have been the friend and the physician of the imperial philosopher, Marcus Aurelius? Was it the spirit of the time that made Vesalius contemporaneous with Luther? Is there food for thought in the fact that Harvey was the pupil and the physician of Bacon, or that, while Napoleon personified the new political idea, Bichat was reforming the science of life and art that is based upon it, that men who read the announcement of the *Researches on Life and Death*, read at the same time the flamboyant bulletins of the battle of Marengo?

We do not need to cross the seas to find the most conspicuous of American physicians, Benjamin Rush, as the intellectual offspring of that great movement that produced the American Revolution. As Oliver Wendell Holmes said, quoting a biographer of Rush, "The same hand which subscribed the Declaration of Political Independence of these states, accomplished their emancipation from medical systems formed in foreign countries, and wholly unsuitable to the state of disease in America."

The next step in the thought I would express, may be illustrated from the ranks of our own profession by examples I would recall. Having established or stated the foundation for my belief, that a direct influence of the study and practice of the art of medicine is to liberalize and enlarge the mental faculties along the humane qualities of its devotees, I am led to indicate my belief as to the conditions of independence and freedom from authority under which not merely advances in medical science, but ultimate truth in all its forms can only be secured. The struggle of the ages has been to secure emancipation of truth from authority; and nowhere, either in the political, theological or scientific world is this thought more clearly exemplified than in the history of medicine. As character can only exist where the mind is free, so truth can only be known where thought is free. In medicine, as in morals, truth is but a single unit in the sum of its entirety, and no two truths in the whole history of the world are found to contradict each other. The plan of the universe cannot belie itself. There are thousands of names in our profession which furnish illustrations of this principle; let us refer to but a few typical examples.

Barbeyrac, a teacher of medicine at Montpelier, was a Protestant in his religion, having outgrown, not the theory of religious thought, but the practice of its organized administration. His creed prevented his

official preferment, but his pupils were his enthusiastic disciples and followed his teaching. Freedom, religious and scientific, breeds in and in, as has been said, until it is difficult to distinguish the dominant type. Barbeyrac abandoned the old pharmacopeias as he had abandoned the ceremonialism of the Roman religion. Among his students was one John Locke, to whom I have referred. Can it be true that to this sturdy devotion to truth and freedom, found in his teacher, the author of the *Essay on The Human Understanding* owed something of that power which gave him so great an influence on subsequent history? Another pupil, Thomas Sydenham, was distinguished in the history of medicine. Sydenham, like Locke, was a Revolutionist, and went to Parliament in opposition to the unfortunate King Charles, and while never admitted as a fellow by the College of Physicians during life, after death his bust was placed by the side of Harvey's. While he was undertaking the reform of English politics, he reformed the practice of medicine. He administered air and cooling drinks to fever patients instead of sweltering them to sweat out disease. He prescribed exercise to victims of tuberculosis.

To go a step further, was there not a profound truth in the speech of medieval ecclesiastics, familiar to us all, and intended as a reproach, "Where there are three physicians, there are two atheists?" Would we call it a reproach to our profession if we understood that it is only by the spirit expressed in the words atheist, infidel, not used and understood, as in the speech of the ecclesiastics, as denying truth, but as denying statements purporting to be truth, which are known to be untrue; in other words, in arraying ourselves upon the side of truth as against authority, that our profession is entitled to respect, or has reached its high estate? Instead of a reproach, it is, and in the name of our profession and of truth must always be, her defense and her glory, that her servitors recognize no authority, save truth alone.

"What care we for our father's creed?
What reck we of the ancient themes?
Is Truth less true in newer deeds
Than in decrepit dreams?
All honor to our brave old Sires—
The unforgotten, worthy dead;
Yet shall our loftiest desires
Be on their dullness fed?

"Give us new Truth altho' it break
Upon us with the lightning's flash!
Give us new Truth! The Nations quake
Beneath the shifting crash.
Give us new Truth! Our souls despise
This blinding rush of deadly strife.
Past forms of Truth are present lies
Which canker all our life.

"Therefore, new Truth! And let it burst
 Like red hot thunderbolts on those
 In whom this fair world stands a curse
 With such a hell of woes!
 New Truth! Which evermore shall right
 Earth's wronged and patient multitude;
 And robe us all in rare delight
 Of deep and earnest good."

And this may be the proper place to say, in the language of an ancient singer, "Truth is a tent that moves." If one erects the truth into a house, builds it into a temple, it will prove to be a tomb. As we recall ancient creeds of our profession, old practices and formulas, we can see that to have petrified them into shrines and temples would have entombed our profession; and until the last ultimate fact and principle has been achieved, our truth must simply be our tent; lest it should otherwise become our tomb.

One more illustrious name of the many that might be chosen, will suffice. Renaudot, a successful practitioner of medicine, who established himself at Poitou early in the 17th century, and became there acquainted with two personages of importance, namely Richelieu, later the mighty Cardinal, and Des Tremblay, his confidant and strong right arm. Under the protection of these men, Renaudot received the title of Physician from the King and took the oath before Dourat, Chief Physician to Louis the Eighteenth. Richelieu, with his keen insight into the worth of men, soon gave him the title of "Physician, Commissary of the Poor, Healthy or Sick, within the Realm." Renaudot established charitable consultations, furnishing drugs to the sick, the modern dispensary. He founded the first establishment in France for loans on deposits, the modern pawnshop. With a constructive imagination, he established the first journal, and an office of publicity under the name "Bureau of Information;" established a register of those who desired to purchase and those who desired to sell property, and was named the "Master Generale" of all these institutions. After perfecting the system the thought came to him that, as a further instrument to carry out these purposes, he would have them printed, that information might be sold to all who wished to purchase news. Richelieu, perceiving the importance of an organ, gave the authority, and the first newspaper ever published in France appeared under Renaudot's direction on May 30, 1631, with the title "Gazette."

As a result of his efforts on behalf of the impoverished, by free consultations and free distributions of medicines and service, and by loans on deposits, he incurred the enmity of powerful interests that were disturbed by the new order of things; an order which set free the suffering and dis-

tressed and relieved them from exploitation by the powerful. These interests and their agents set about the destruction of Renaudot. Notwithstanding that he had received the title, "Historiographer of the Crown," he lost both his protectors, Richelieu and the King. He had fulminated an epigram against the Dean of the Medical Faculty, Guy Patin; the contest waxed hot; accusations and epithets were showered upon him; he attacked the faculty; the faculty responded by an attack upon "Our Calumniator;" he lost case after case; his privileges, franchises were taken from him; he was directed to stop all charitable services; to close his Bureau of Information. But the Gazette continues, thanks to Mazarin; which publication, with occasional interruption, has continued until the present time. Renaudot, discouraged by disappointments and vicissitudes, not recognizing that his greatest claim to fame for all time would be the Gazette, died October 16, 1653. His real title to fame is in the Gazette, and the loyalty and zeal with which, in spite of all the cruel disappointments and withering vicissitudes that overwhelmed him, he maintained to the last the courage of his convictions, and his efforts to support them.

The names selected in the illustrations given are used for the purpose of making clear the proposition as it appears to my mind; that all that has been heretofore accomplished that is of real value in the service of truth and in the cause of humanity by men of medical training, has been brought about because of and by the efforts of men committed in their life and practice, to an indomitable spirit of freedom. We have come to the conclusion that the only influence that any man or body of men need to fear is that influence or interest that fears the truth. It is the truth, and the love of truth, that have given to mankind the measure of freedom it enjoys, and it is only by the maintenance of this zeal for the truth that continued progress may be made. We have reached the stage in the development of medical science, where, as in other arts and sciences, we stand upon the verge of greater victories over disease and suffering than ever before. It is impossible to believe that the active ferment in industrial, economic and political thought will outstrip the medical profession, and leave us stranded, lagging in the rear of human progress; but if we hope or expect to keep pace with the human advance that is rushing forward, now, at a rate never before known, we must not only maintain the freedom of the past, but we must enlarge it; we cannot expect to go forth conquering new fields unless we free ourselves from the shackles of old beliefs and customs. The profession of medicine exists for the sole purpose of curing disease and the prevention of human suffering. We are entitled as of right, by virtue of our high calling, and it is our duty and obligation to appropriate to ourselves all human knowledge for our province.

New fields extend before us in every direction. If instead of curing disease once established, we can prevent disease, so much the greater glory

in our service; so much richer is human life, not for others alone, but for ourselves as well. The joy of service shall be ours.

It has occurred to me to emphasize the fact, that our profession cannot be satisfied at this time merely by a review of past achievements, great as they are and worthy of our emulation. If we are to prevent disease as our chief mission, or as the most effective method of warfare upon this chief enemy of human progress, we must know the conditions, not merely the material, mechanical and social from which they result, but the primary conditions that lie still further back of the immediate conditions that result in disease. Does the slum, the sweatshop, the brothel, the tenement house, exist in our cities? We immediately know where lies the hotbed of many diseases. Do the conditions of labor in immense factories and overcrowded department stores confront us? We immediately know where some diseases rise. Are men and women forbidden by man-made laws and institutions, to live natural lives? We know where prostitution, and abortion thrive, and the diseases and suffering that are their sequel. Do we understand that economic and industrial institutions and their consequences are the result of political activity in behalf of special interests of any kind? We then know, at once, some of the sources of the disease and human suffering that are their inevitable consequence. If we are to prevent disease, we must trace it to its original germ and extirpate it there, before it shall have contaminated society, and invited the downfall of our social order.

Is there one of our brothers, struggling to serve humanity and sustain himself, under discouraging conditions, with inadequate facilities and meager resources, with more time perhaps for study than he has books to fill it with, while the whisper of policy, of ethics, with menace or promise is ever before him, to urge or stifle his voice, as to custom, practice, habit, institution or interest, bearing directly upon the health of individuals or of the community? Let him remember that the chains of modern slavery are not of steel; that if he would be free, he must be deaf to every call but that of duty; and that if he would serve humanity he must be free.

By the common consent of mankind, those entitled to the privileges of our profession bear the title, Doctor. That means, teacher. As we are teachers by name, we must be such by right, if we are to maintain and advance the dignity and the worth of our service to human progress.

It will have occurred to you all that the subject I have rashly ventured to discuss is one that requires for adequate treatment far more time than can possibly be allowed on this occasion, and that the materials available for its apt elucidation would fill volumes. Yet, unless we are to be satisfied with a mere catalogue of achievements, there is another branch of the topic to which no reference has been made; that is, our policy as a body of cultured scientists and patriotic citizens. If I

may trespass upon your indulgence, let me briefly allude to certain subjects that are taboo, both by custom and policy.

Something has been said with reference to the relation between the physician and public service, in the way of municipal, state or national sanitation. It is a matter of interest that the first action that ever originated between two separate States, in the United States Supreme Court, viz.: the case of the State of Missouri *vs.* the State of Illinois and the Sanitary District of Chicago, reported in 200 U. S. (Supreme), page 496, involving grave and far-reaching political principles and scientific problems of vast importance, was decided upon evidence furnished by two physicians, one a chemist, Dr. John H. Long; the other, a bacteriologist, Dr. Robert Zeit, both of the city of Chicago. I cite this case, and the distinguished services of these eminent gentlemen, as an illustration; and while the general subject of this case differs from that I have in mind the principle is identical. The services of these gentlemen were called by the State by reason of their pre-eminent knowledge of the subject. This is not a case of the blind leading the blind.

There is another range of subjects, which, as indicated, are taboo, of which the members of our profession are pre-eminently qualified to speak. In this discussion, I do not refer to these subjects for the purpose of influencing the individual action of any of my medical brothers; but to indicate that the time has come when the profession, as a body, should take ground as to their treatment. I refer, particularly, and as an example, to a Purity Propaganda; the liberty of conscience and of speech, with special reference to discussion of the sex problem as a social question. It is, of course, a truism, first demonstrated in medical practice, that the evils of one form of privileges are not to be corrected by evils flowing from some other form of privileges. The Infinite has planted in humanity, as part of its nature, certain appetites, desires and propensities. In a society in which man-made laws, crude, unenlightened or of consciously perverted legislation prevail, it results that men and women are unable to live natural lives; that is to say, in conformity with the fiat of the Infinite, the one or the other will be overcome, and evils will result. And where these evils exist (and let me ask where do they not exist?), the first step toward cure, say nothing of prevention, must be open and free discussion for the purpose of determining the primary cause.

Let us examine the terms of this problem. When we remember that in every land sufficiently civilized to keep vital statistics, or take a census, these records show, by every fact which has a bearing on the moral status of a people, by the records of insanity, suicide, abortion, divorce, infanticide, penology, dependent poverty and others, that the moral nature of man is deteriorating at a rate far more rapid than any increase in population or wealth; that is, that the strain of conflicting

systems is growing more severe; and further, that much the larger part of these departures from the normal spring from pure ignorance, it becomes apparent that cure or prevention can only be secured by the diffusion of special intelligence. Courts and legislatures now treat the victims of this ignorance as criminals, instead of victims of social disease. A study of the diseases peculiar to this problem gives most appalling results. If the question were simply of the consequences to the original victims, it might perhaps be wise to let them suffer the penalties of vice as a safeguard to the future. But no group of men is better aware than those who honor this presence, that the danger of silence and secrecy as to these conditions, is infinitely greater to the innocent members of society. With 80 per cent of the blindness of the new born, and 20 per cent of this terrible affliction from all cases due to impure infection; with the consequences of specific disease infecting the air of our streets and public vehicles, is it not time there was begun somewhere and by some source, a method of education as to these subjects, which will at least safeguard the innocent? Who can realize more fully the need for a propaganda in the direction of safety than the members of the medical profession? On whom then rests the responsibility for an organized effort to endow those who feel the call to perform so highly important a public service, with the privilege of performing it? It should go without saying that regard for the moral welfare of the community or for the innocent sufferers of venereal infection, compels a demand on behalf of the general public, for such freedom of press and other means of publicity, as will give to each the use of his right to learn and to know how terrible are the ravages of these diseases; how their presence may be detected; how they may be avoided or cured. If the only sin is ignorance, the only crime is fear.

Another suggestion is with reference to State or National legislation as to questions of health and sanitation. Much has been said in the past with reference to the abolition of state lines on the question of marriage and divorce. It occurs to me, without desiring to discuss the question, that there is far better reason to abolish state lines with reference to medical practice acts.

At the risk of being told to stick to my last, I am impelled to make a suggestion as to a field in which something at least remains to be accomplished. That is with reference to so-called expert testimony. Without intending to cast reflection upon a worthy body of men, I would ask if the time has not arrived when the medical profession occupies a place in public estimation approximating that of the lawyer? In the contemplation of many cases in which alienists, surgeons and physicians have respectively been called upon to elucidate facts by expert opinions, it appears to the layman as if it were possible to secure the most skilled, cultivated and authoritative scientific opinion upon any or all sides of

many questions of fact, involving the technical knowledge or skill of the medical faculty. "You pays your money, and you takes your choice." He or she is sane or insane; suffers or is free from every anatomical or physical disorder, from chillblains to housemaids' knee, the verdict being dependent entirely upon the amount you are willing to pay for an opinion, or who it is that first engages the expert. Of the three kinds of liars, viz.: Liars, Damned Liars and Expert Witnesses, the most dangerous if not the most numerous, are the last. In offering the suggestion of a remedy for this condition, less in the hope that any particular suggestion, than that some suggestion, shall be adopted, at the demand of the medical profession, which, if it can not restore, will at least prevent the further impairment of its ancient dignity, from this source, it is with high appreciation of the difficulties involved. In its origin, this class of testimony was intended as an aid to the court and subject to the call of the judge for his benefit, not as to the facts themselves, but as to the meaning of established facts. Might not there be established in every judicial district a board composed of one or more physicians, occupying an honorable public office, whose duty it shall be to enlighten the courts as to questions within the special knowledge of the faculty? I make no attempt to work out the details as to method of selection, compensation, tenure or otherwise, in connection with the suggestion, but that some step must be taken in this direction, should be evident to all medical men.

I would by no means be understood as giving a conclusive list of suggestions. It has been my purpose to illustrate a field that stands waiting our efforts. To accomplish results commensurate with many important needs, it is first necessary that our profession be able to influence public opinion. This can only be effectively accomplished by a coalescence of opinion and purpose. We owe it to society that we maintain the usefulness of our art at its highest efficiency, to the end that we may confirm our title to the respect of public opinion.

To each of us has come at times the insistent question of the meaning of life, the purpose of existence in a world so filled with suffering. If we accept the conclusion of intelligence and of plan and purpose in the universe, it must be clear that experience is a feature or instrument of this plan, whether as to individuals or states. In response to the vital principle, nations come into existence, and because of some failure to conform with the natural principles of social order, perish from the earth. The one lesson of all history is that human nature is the same wherever and under whatsoever conditions men exist. The law of social progress has been formulated as Association in Equality. Every organized society is based upon this principle, and in exact measure of conformity therewith, human progress has resulted and states and nations flourished. The passing of an empire simply means the failure

of its form of social order to meet the demand of human nature. With nations, as with individuals, experience is the mother of wisdom and the course of human progression towards its ultimate, is marked, in successive stages, by the elimination of principles and institutions that have been fatal to social order in former experiments.

It will universally be found that this fatal principle lies in institutions which permit departures from or violations of that equality, association in which is the law of human progress. Inequalities, except as they permit of exploitation, may be disregarded. In its last analysis, the only cause of the death of any special social order has always lain in the fact that its institutions permitted groups or sections of its population to appropriate the fruits of the industry of other groups.

I refer to this, because, as I believe, the principles here expressed have a bearing upon the future of the medical profession, and its usefulness to society.

In the natural order of evolutionary processes, the principle of synthesis has its due and ordered time and place. In America, this time is now. The concentration of productive energies has triumphantly demonstrated its economy. There is, however, danger of confusion as to the subjects to which this principle may safely be applied. In the manufacture of material things, combination may safely be encouraged and extended to the uttermost, as economies in production and distribution are its natural results. Intellectual truth, however, cannot be syndicated or monopolized. The practice of medicine can not be improved by a trust. "Hand me down" methods, theories, or dictatorial advice cannot aid the intelligent, independent practitioner. Kindly suggestions and the plain, unprejudiced statements of the results of personal, clinical experience are valuable and are welcomed by all liberal and progressive physicians. But the *ipse dixit* "this is so" of the doctrinaire, the pharmacist, the pharmacologist, or the medical editor can but engender discord and retard true medical progress. The time has passed when a few men can successfully set themselves up as authorities, or dictators, or arrogate to themselves any special theory or precedence. Candid practitioners today recognize good in all systems based upon scientific thought and pursued with intelligence and sincerity. By means of release from the shibboleths of the past, and adherence to a given "authority" or "school" the freedom of present practice is greatly enhanced, to the immense benefit of the patient and the lasting honor of the physician.

In science there is no burden of proof; neither can medical education and training fulfill its highest mission under the "factory system." Let me say that it is doubtful if every successful practitioner in the history of our profession has not at times resorted to the primitive methods of the voodoo and the witch. One would be shocked, at first impres-

sion, to be told that he had employed such methods; but in the last analysis, what is mental suggestion or the administration of placebos; and who has not employed them? Remembering the function of our profession to be the prevention and cure of disease, and the relief of suffering; and remembering that no two cases of disease in the whole history of the medical profession presented identical conditions, it is monstrous for any man or set of men to forbid the use of any method, any instrument or remedy, or any treatment which in the opinion of the attending physician promises success.

I repeat, it is an insult to our independence and intelligence that we are not allowed to read any book or medical journal we please, at any time or place, whether in a medical society or in the seclusion of our offices, to use any remedy we please whether it be so-called "regular," "homeopathic," "eclectic," "alkaloidal" or "proprietary," or any method of treatment whatsoever, even though it smack of Christian Science or osteopathy, without being subjected to public ridicule and criticism by a few self-appointed "authorities" and "leaders" in medicine.

In the medical profession, as in religion or science, the perils of dominating influence can not be escaped. While the evils flowing from industrial concentration can be met, the evils that must follow the syndication of intelligence can not be avoided. As stated before, the struggle of the ages has been the emancipation of truth from authority. No thoughtful physician can fail to see the immense advantage of a liberal mind in the pursuit of his calling. It is of signal importance that the doctor should not only welcome every advancement in medicine, but he should at all times be willing to put the broadest construction upon opinions conflicting with his own. Every physician having the interest of his profession, and of humanity, at heart, should admit candidly the value of any method, theory or practice which may promote the common object of alleviating human misery, taking the generous view of things, without which the pursuit of learning is but a jaundiced, melancholy affair.

Fortunate it is for him who has learned the charity and liberality which characterize all genuinely great or progressive men in every profession. His open heart and intellect are spared many a regret, and throughout his career for him the sun of truth is shining everywhere.

If we find our pathways obscured by shadows, it is because we are walking away from the light and not towards it. The sacred flame that glows upon the altar of truth illuminates and cheers only as we approach it.

If we wish to progress and influence humankind in the right direction, each of us should be modest in the presence of nature, fearless in the

face of authority, unwearying in the pursuit of and absolutely free to seek the truth in our own way.

"Freedom's secret wilt thou know?
Counsel not with flesh and blood;
Loiter not for cloak or food;
Right thou feelest, rush to do."

A PLEA FOR THE CROSS-EYED CHILD.

BY JOHN GREEN, JR., M. D., St. Louis, Mo.

Why is it necessary to enter a plea for the cross-eyed child? It is because, in my experience, and, I dare say, in the experience of my colleagues in ophthalmology, the cross-eyed child is denied a "square deal." As a direct result of improper advice given the parent the child is permitted to continue indefinitely bearing a serious deformity, resulting finally in partial or almost total loss of vision in the crossing eye. It is seldom indeed that the oculist is given the opportunity of proffering his skill to the unfortunate little one until some years have elapsed from the time the squint was first observed—years of priceless value if properly employed for the child's ocular welfare, but alas, how frequently allowed to slip by, with no effort made to remedy the defect.

Whence arises this deplorable state of affairs? Surely not with the child and only indirectly with the parent. The young mother with the few months' old babe in her arms is alarmed to see the little one's eyes turning in, perhaps momentarily, perhaps for several minutes at a time. As is well known, the motor co-ordination of the ocular muscles are at first somewhat imperfect, and hence a transient strabismus is rather the rule than the exception in young infants. When appealed to by the anxious mother the family physician is able to give the assurance that "all will come right in time"—a prophecy almost invariably fulfilled.

After the child has passed the earliest period of infancy, has attained perhaps the age of one to five years, the mother will perhaps notice that at times one eye or the other does decidedly turn toward the nose. At first the squint is periodic and of short duration—followed by intervals during which the eyes appear entirely straight. The mother recalling the doctor's early advice naturally believes it again applicable, and confidently awaits the time when the eyes shall again be straight. A few months later she is disturbed to find that the squint which was at first noticeable only when the child was sick or fatigued from play, has become permanent. The crossing may be wholly confined to one eye, the other remaining straight (monolateral squint) or the crossing may alternate, shifting from one eye to the other, and constituting the so-called alter-

nating squint. It is at this stage that the family physician is again appealed to. Upon his advice will depend the future ocular welfare of the little one. It will be well if he realizes the weighty responsibility resting upon him and justly endeavors to frame an answer in consonance with our knowledge of this affection.

I can readily see how the physician who daily encounters the stern realities of the battle of life with death should regard a pair of cross-eyes as a trivial ailment, too insignificant for his serious consideration. That it is of vital significance to the afflicted child I hope to be able to show you shortly.

The oculist rarely sees the squinting child when the squint first manifests itself. Almost always there is history of neglect, of delay, for several years. Why is this so? I have made careful inquiry in all cases that have come under my observation during the past six years and the conviction has been borne in upon me with ever increasing intensity that the advice given by the family physician has been largely instrumental in depriving the child of the opportunity of getting a full measure of relief. Now, what is the tale that the parent unfolds to the oculist? It is something like this: "Yes, doctor, little Johnny began to be cross-eyed right after he had the measles and we laid it to that. We took him to our family doctor and he said: Well, don't bother about that. The eyes will become straight of themselves after a while." The advice varies: "Yes, the child is cross-eyed and he will have to have glasses, but they can't be fitted to him until he is a good deal older." Or "nothing can be done at present. When he is fifteen years old one of the eye muscles will have to be cut, that will straighten his eyes." Sometimes the assumption is that the external rectus muscle is paralyzed and that internal treatment is indicated. Whatever form the advice takes it leads to an identical result. The mother, assured that some time in the future "something can be done," does not pay any more attention to the matter, and the golden time which should be occupied in intelligent and unremitting treatment of the eyes is frittered away in total neglect.

Now, I do not hesitate to affirm that any such advice as detailed above is absolutely pernicious. Surely if the family physician were at pains to understand the etiology of convergent squint, he would never be guilty of uttering opinions so entirely at variance with our knowledge of this affection. The earlier view that convergent squint was essentially of muscular origin, in other words that it depended upon shortening of the internal recti, faulty insertion of their tendons or paralysis of the external recti, has been thoroughly disproved. Those facts which definitely indicate that the muscles are not primarily at fault are the following: (First) the power of the outward rotation of the squinting eye is perfect or nearly so; (second) a squint frequently disappears during general anaesthesia; (third) a high degree of convergence may disappear

when the accommodation is paralyzed by atropin and will reappear when the effect of atropin wears off.

The great Dutch ophthalmologist, Donders, propounded the view that hypermetropia was the fundamental cause of squint. He was led to this conclusion by the following considerations: When the gaze is transferred from a distant to a near object the eyes "focus" or "accommodate" so as to bring the image of the object sharply upon the retina. This focusing or accommodating power is accompanied by a convergence of the visual axes which are then directed exactly to the object viewed. The functions of accommodation and convergence are thus associated, although their association is somewhat elastic. Normal sighted or emmetropic eyes when looking at a distant object are eyes "at rest," and do not require any focusing in order to see clearly. When such eyes look at an object only twelve inches away they accommodate or focus to a distance of twelve inches, and converge just sufficiently to permit their visual axes intersecting at the object. The nervous impulse required to focus the eyes at twelve inches is just sufficient to converge their visual axes to intersect at this point. Far sighted or hypermetropic eyes when looking at distant objects are not "at rest," and require a certain amount of focusing power in order to see clearly. When such eyes look at an object only twelve inches away, the amount of accommodative effort is equal to the amount required for emmetropic eyes plus the amount which has already been brought into use for the distant object. There is, therefore, an excessive accommodative power required which implies a greater nervous impulse. Now the function of convergence receiving the additional nervous stimulus is made to act too strongly and there is a tendency for the visual axes to converge to a point nearer than twelve inches. Donders assumed therefore, that hypermetropia was at the root of the evil, was, in fact, the fundamental cause of squint.

The theory of Donders was unquestionably a great step in advance, but failed to account for many of the observed facts.

It is known that the vast majority of children are hypermetropic and yet very few squint. Again, that high degrees of hypermetropia do not tend to cause squint, and lastly that the degree of refractive error has very little to do with the question whether the patient shall or shall not squint in the first instance. It remained for Claude Worth, an English ophthalmologist, to supplement the work of Donders and to point out that the essential, the fundamental cause of convergent squint lay in a defect in the "fusion faculty." Now what is the fusion faculty? It is that faculty which enables us to blend mentally the images received on the retinae of the two eyes. Worth's investigations indicate that the fusion faculty is absent at birth, the normal positions of the eye being maintained at first by the motor co-ordination. As early as the sixth month there is evidence of vision with the two eyes, or binocular vision.

The faculty is complete before the end of the sixth year. Worth states that when the fusion faculty is well developed "nothing but an actual muscular paralysis can cause an eye to deviate." He states further that in some cases "owing to a congenital defect, the fusion faculty develops later than it should, or it develops very imperfectly, or it may never develop at all." In such cases anything which disturbs the balance of the motor co-ordinations will cause squint, and such disturbances, in the order of their importance, are (1) hypermetropia; (2) unequal refraction in the two eyes; (3) congenital amblyopia; (4) a tendency of one of the eyes to turn up or in; (5) specific fevers; (6) convulsions or severe fright; (7) hereditary influence.

In brief, a child begins to squint because, in the first instance its fusion faculty is poorly developed or entirely absent. Contributing to this end are the various causes enumerated above. Let us consider now what the conditions are at the *very beginning* of a case of concomitant convergent squint. The eye which turns in possesses, in the majority of cases, almost as good vision as the eye which is straight. It is only in the rare cases of congenital defective sight, or amblyopia, which recent investigations have shown to be due to hemorrhages into the retina at birth, that the defective vision has an anatomic basis. At this stage, if the squinting eye is forced into use, it will speedily regain the vision which it has begun to lose. If, however, the child is neglected, the vision of the squinting eye grows progressively worse, and may become in time so blind that the child is hardly able to count fingers when held a foot in front of the eye. When this stage has been reached it is usually too late to force the eye to take up its function again, and it has become blind, or amblyopic from disuse. It may safely be affirmed, that only in those cases in which the educative treatment of the squinting eye is begun very shortly after the onset of the squint, will it be possible to bring about a complete restoration of vision. From this point of view alone it is absolutely essential that there be no delay in instituting treatment. Furthermore, the sooner the training to develop the sense of fusion is begun, the better chance will the child have of acquiring full binocular vision.

How soon after the squint is observed should treatment be begun? *Just as soon as possible.* To quote Worth again, "In the case of a young child with a constant monolateral squint, the results of this disuse of the deviating eye is that its visual acuity gradually deteriorates." This deterioration from disuse is more rapid the younger the child. "A child with good vision in each eye who develops a constant monolateral squint at the age of six or eight months will in the absence of proper treatment become rapidly blind in the squinting eye. The loss of vision in the deviating eye is so rapid that the power of central fixation is often lost

within eight or ten weeks." In an older child developing squint, the loss of vision is less rapid but none the less certain.

It is not my purpose to dwell on the treatment of squint. Suffice it to say that there are five therapeutic indications: First, to correct as accurately as possible any refractive error; second, to occlude the fixing eye, thereby forcing into use the deviating eye; third (for the same purpose), to instill atropin into the fixing eye only; fourth, to train the fusion sense, and fifth, operation. A very widely held belief is that a child under four or five years cannot wear glasses. This is entirely erroneous. Worth records instances of infants under twelve months wearing correcting lenses with great satisfaction. At present I have under observation an eighteen months old child who came to me with a constant monolateral squint, who is wearing strong plus spherical lenses with apparent entire satisfaction.

It is only in cases where treatment has been possible from the very earliest period of the squint that a true cure can be accomplished. By "cure" I mean, not simply that the crossing eye shall be straight, but that the following additional conditions shall be fulfilled: First, that the formerly squinting eye shall have nearly or quite as good vision as the fixing eye; second, that the fusion faculty shall have been developed to the point of maintaining the highest degree of binocular vision. How very seldom this ideal result is attained, I am sure all ophthalmic surgeons will testify. Many a pair of cross eyes are made straight by glasses or operation, and this removal of the deformity may seem all sufficient to the unthinking. However, when we recall that in such cases the eyes have no ability to work together, and that one of these straightened eyes possesses only sight enough to count fingers held close to the face—is in fact to all intents and purposes a blind eye—our feelings of elation are somewhat dampened. Nor does it dispel our gloom to realize that all this might have been obviated, had the family physician properly understood his responsibility when advice was first sought.

The following cases illustrate types of strabismus as they present themselves to the oculist:

E. C. R., age six years. Father states that child's right eye has been noticed to cross slightly for about a year. There is a constant monolateral squint of about twenty degrees. In the right eye the vision is slightly below normal, in the left eye normal. Fusion sense present, but defective. After wearing glasses for compound hypermetropic astigmatism for six weeks the eyes were found to be entirely straight, and the vision of the right eye had again become normal. Training of the fusion sense was begun. At the end of three months the eyes are perfectly straight, the vision of each eye is normal and the child has full binocular vision.

M. A. M., age nine, had diphtheria five months ago, followed by slight turning in of the left eye with the complaint of double vision. Double vision disappeared in a week. (Evidently at that time a paresis of the left external rectus.) The mother states that for the past two months the right eye has turned in slightly. Examination shows the right eye convergent 15 degrees, and vision in this eye reduced to one-fourth of normal. The appropriate glasses (plus spherical) were at once prescribed, and the right eye forced to come back into use by placing a black screen in front of the left glass. Within a month the right eye had regained almost all the lost vision and the left eye was crossing slightly behind the screen. Fusion training was begun at once and in a few weeks the child had developed full binocular vision. The eyes are now perfectly straight but vision in the right eye is still a little below normal.

D. E. H., age six years. Child's left eye has been crossing since the age of one year. Entirely neglected. Convergent squint about 25 degrees. Vision in the squinting eye reduced to one-sixth of normal. Appropriate glasses brought the eyes straight after a time, but no improvement took place in the vision of the left eye. This is a case where unquestionably the prolonged delay was responsible for the development of the partial blindness in the squinting eye.

G. B. S., age four. The right eye is said to have squinted since the age of nine months. A year ago he was taken to the family doctor, who said that the child was too young for treatment. He has therefore received none. In this case the appropriate glasses brought the eyes entirely straight, but the eye that had squinted is now only able to count fingers at two feet.

E. M., age eight years. This little girl has an alternating squint of four years' duration. There is no difference in the visual acuity of the two eyes and she fixes with either as well. All tests indicate a complete absence of the fusion faculty. Glasses appropriate to her refractive condition (low hypermetropia) diminish the degree of squint slightly, but do not abolish it. She will have to be operated upon eventually to bring the eyes straight.

The following case illustrates conditions after fifteen years of neglect:

R. M., age 20, has cross eyes since earliest years. She has worn glasses at times but for years at a time has been without them. Visual acuity in the squinting eye is reduced to counting fingers at two feet. A prolonged trial of glasses fully correcting her refractive error did not in any way influence the position or vision of the left eye. A tenotomy of the internus combined with advancement of the externus produced a first-class cosmetic result but of course had no effect on the vision of the squinting eye.

The last case which I wish to report illustrates in a striking manner how a life may be wrecked by neglect to appreciate the needs of a child with cross-eyes.

A. L., age 24 years. Left eye began to squint when he was four years old. He was entirely neglected and never consulted an oculist. Vision in right eye was good. Five months before coming under observation, while in an iron foundry, he received a splinter of steel in the right eye. The eye became infected and despite the efforts of a competent oculist was lost. The poor fellow was horrified to find that he was practically blind, the squinting eye having vision only sufficient to enable him to count fingers at three feet. A year later he committed suicide.

To recapitulate: Concomitant convergent squint can be definitely and completely cured only when managed from its earliest beginnings. Mere straightening of cross-eyes, after delay has permitted the development of amblyopia from disuse, falls short of an ideal therapeutic result. It is, therefore, the imperative duty of the physician whose advice is first sought to point out to the parent the disastrous results of neglect and delay and to insist strongly that treatment be instituted at once.

Metropolitan Building, Grand and Olive.

THE USE AND ABUSE OF THE MICROSCOPE IN GENERAL PRACTICE.*

BY ALBERT E. TAUSSIG, M. D., St. Louis, Mo.

When, not very many years ago, laboratory methods came into general use in the diagnosis of internal diseases, their practical value was regarded somewhat skeptically by a majority of the older practitioners. Soon, however, their usefulness became generally recognized and it was not long before the pendulum began to swing to the other extreme. Continually greater dependence was placed, in diagnosis, upon the laboratory findings, and laboratory workers took it upon themselves more and more to make positive diagnoses upon the results of their findings alone. Thus it became customary to pronounce a disease typhoid merely because of a positive Widal reaction, or diphtheria merely from the results of a culture from the throat. We forgot that the Widal reaction, positive or negative, is not always absolutely pathognomonic, and that there are other bacilli that morphologically and culturally closely resemble the Klebs-Loeffler bacillus. It even happened that municipal bacteriologists reported a case to the sanitary authorities as diphtheria and had the patient's house placarded without waiting for the report of the attending physician, and cases occurred in which this was done when the case clinically was clearly not one of diphtheria.

While thus the laboratory findings should be used critically, not slavishly, it is nevertheless true that they have become indispensable to ac-

*Read before the St. Louis County Medical Society, Aug. 14, 1907.

curate diagnosis, and that a microscope at least must have a place in every physician's armamentarium. If we are better diagnosticians than the men of fifty years ago it is not at all because we are more careful observers than they, for we are not. Nor is it entirely on account of advances in physical diagnosis, important as these are. It is primarily because we have at our disposal instruments of precision, and of these the microscope is unquestionably the most valuable.

It may be of interest to take up very briefly a few of the most important conditions in which the microscope is indispensable to the physician. The microscopic examination of the sputum is of service in a great variety of respiratory affections, particularly of course in tuberculosis. The presence in the sputum of tubercle bacilli needless to say is conclusive of tuberculosis somewhere in the respiratory tract, not however necessarily in the lungs. But the possession of this pathognomonic sign tends to make us neglectful of other microscopic methods of great value, such as the study of unstained sputum, the search for elastic tissue, and the like. Moreover I think it is a fact that, trusting to our microscope, many of us are less careful and subtle in our physical examination of the chest than our predecessors of the time antedating Koch's discovery. We are apt to forget that it is in the period preceding the appearance in the sputum of tubercle bacilli that the diagnosis of phthisis is of most value to our patient, for it is then that proper hygiene will most certainly effect a cure.

I need say nothing about the diagnostic importance of the microscopic examination of urinary sediments. But far from taking the place of careful clinical observation, such examinations merely give us additional data for making our diagnosis. Casts do not necessarily mean nephritis, nor their absence healthy kidneys. I remember being called to see a young man whose urine, previously examined, had been normal. He was suffering from extremely severe urticaria, and his urine during the attack contained much albumen and multitudes of casts of all sorts, hyalin, granular and epithelial. Two days later, the urticaria had disappeared and the urine was free from albumen and casts. It is hard to conceive of a true nephritis lasting only forty-eight hours. On the other hand we have all seen cases of chronic nephritis in which the urine from time to time seemed perfectly normal. As a result of the comparison of the urinalysis with the post-mortem findings in the Massachusetts General Hospital, Cabot concludes that neither the presence of albumen nor of casts is of fundamental importance in the diagnosis of nephritis. This skepticism may be exaggerated, but I believe it is a fact that the urinary findings are rarely pathognomonic of nephritis. They merely furnish us additional data, which taken in connection with the history and the physical examination of the patient, enable us to come to a conclusion.

If we need to be warned against relying too much upon the sputum and urine work, it is true on the other hand that the routine microscopic examination of the stool suffers from unwarranted neglect. Time will not permit even the briefest summary of the conditions in which a study of the stool is of importance, but I think it may be said that the more regularly we make routine stool examinations the less frequently shall we be puzzled by obscure intestinal affections. Occasionally the nature of some obstinate bowel trouble will be cleared up by the discovery of an intestinal parasite responsible for the condition, and the finding of pus, blood, mucus or fat as well as the degree of digestion of the various food elements, will often be indispensable for correct diagnosis. As in all microscopic work, the proper interpretation of the results of stool examination presupposes a thorough familiarity with the microscopic appearance of the constituents of normal as well as of pathologic stools, but in spite of the amount of rather disagreeable work involved, the diagnostic results obtained are well worth the time and labor expended.

Nothing in clinical microscopy is of more interest or value than blood work. Here, too, however, the overvaluation of the microscopic findings may be hardly less disastrous than their undervaluation. The radical differences of opinion one finds in regard to the value of leucocyte counts in appendicitis are based upon a false notion of the significance of this diagnostic method. An appendix on the point of perforating or already gangrenous, may produce little or no leucocytosis, whereas an infection so mild as not to require operation may be accompanied by a high leucocyte count. As Emerson well puts it, a single leucocyte count in surgical affections is of no more significance than one temperature determination. It is the course of the leucocytosis that counts. A steadily increasing leucocytosis usually means a progressive infection, and a decreasing count one that is yielding. This is well illustrated by the following case of typhoid perforation. The patient, a woman 27 years old, was in the fourth week of a severe typhoid fever, with high temperature, unusually rapid pulse and respiration, marked meteorism, some abdominal tenderness, alternating stupor and delirium. On August 8th she was awakened about 4 A. M. by violent abdominal pain. This lasted a few hours and was replaced by a general feeling of soreness over the entire abdomen. During the day the condition did not change essentially; the temperature, which had ranged about 104 degrees, falling to 100 degrees, and the pulse, which had risen to 140, early in the morning falling to 120. The abdominal distension, which had been marked throughout the illness, increased somewhat until the liver dullness was obliterated and the apex beat was felt in the 4th interspace. There was some diffuse abdominal tenderness but no spasm of the muscles. Next morning the patient was much weaker; her face had an anxious expression and there was a trace of abdominal muscle-spasm.

The leucocyte count during these twenty-four hours was as follows: 11 A. M., 5200; 2:45 P. M., 6000; 6:45 P. M., 7200; 7 A. M., 8400. At 10 A. M. the abdomen was opened under infiltration anesthesia and a perforation about the size of a pin's head found in the lower ileum. In this case, the typical signs of perforation were wanting and the decision to operate was based upon the history of pain, the more or less vague physical signs and the steadily increasing leucocyte count. The fact that there was at no time a leucocytosis as compared with normal blood was evidently due to the typhoid leucopenia. Any single leucocyte count would have lead to a false conclusion.

In appendicitis, the clinical observation of the patient is unquestionably of far greater significance than the leucocyte count, so that many surgeons find themselves quite able to dispense with the latter. Where the condition is obscure however, I am sure that the microscope has its value, in that it furnishes us with one more factor in estimating the patient's condition. Leucocyte counting, while simple enough in the hospital or the office, is not always convenient in private bedside practice. The study of the stained specimen can usually take its place. A skillfully made spread gives a very accurate notion of the degree of leucocytosis and a differential count furnishes still further information. Indeed of either of the two methods alone there is always more to be learned from the stained spread than from a blood count.

In internal medicine, blood work is far more important than in surgery. Of border line cases I remember one that was not without interest. A woman, some days after labor, began to run a temperature that decidedly suggested sepsis. The leucocyte count however, instead of being high, was only 4000. This suggested typhoid, and, while the Widal test was negative, a bacteriologic examination of the venous blood made next day, demonstrated the presence of typhoid bacilli. Here the microscopic examination alone made the diagnosis possible, and not only relieved the physician and the patient's family from a load of uneasiness, but possibly saved the patient from operative interference. In a multitude of diseases, the diagnosis, or at least the early diagnosis, is often impossible without the study of the stained spread. I need only mention the leucopenia and the mononuclear excess in typhoid, the eosinophilia of trichinosis, the presence of the spirochæte in relapsing fever, the blood picture of leucemia and of pernicious anemia. There can be no question that the last disease is often overlooked. Typical cases are readily diagnosed, but chronic cases are not rare in which the anemia plays a very secondary role. These may present the clinical picture of amaurosis, peripheral neuritis, tabes dorsalis or epilepsy. Where the psychic disturbances are outspoken the patient may be sent to an asylum for the insane. Gastro-intestinal disturbances may occupy the foreground of the symptomatology and cancer of the stomach may be

closely simulated. The diagnosis can always be made by means of repeated and careful study of the blood and by this means alone.

Malaria can usually be recognized without the use of the microscope, but in atypical cases many a false diagnosis will result. This is especially the case where some other disease simulates malaria. How many cases of incipient phthisis are dosed with quinine, arsenic and the like while the most favorable moment for a cure by means of hygiene is slipping by. To be sure this sort of thing is steadily becoming more infrequent. Some ten years ago it was my good fortune to see a case of interest in a somewhat different direction. A young man from the Mississippi bottoms came to town with a typical history of chronic malaria. While here he continued to have chills and fever, sometimes at irregular intervals, but usually every other day. The spleen was about the size and consistency of a typhoid ague-cake. He was successively in the hands of some of our best physicians, was always told he had malaria and indeed usually improved temporarily under quinine or arsenic. Finally he came to see Dr. Fischel who asked me to search for the plasmodia. It required only a glance at the blood to establish the diagnosis of myelogenous leucemia. Unfortunately at that time, the correct diagnosis was of little service to the patient. Now, however, by means of the X-ray we might well hope in such a case to effect if not a cure, at least a period of apparent recovery lasting six months or a year.

It is then clear that the microscope is often indispensable for accurate diagnosis. But it is far from being the most valuable portion of the physician's equipment. First in importance comes the power of careful clinical observation and ripe judgment in the interpretation of signs and symptoms. Then comes the habit of careful and complete physical examination. It must not be forgotten that the stethoscope is a far more valuable diagnostic implement than the microscope. But since the pathognomonic sign is rare in medicine, our diagnosis usually must be made on the principle of cumulative evidence. We must weigh carefully each bit of information obtainable pro and con, and decide in the direction toward which the bulk of evidence tends. The greater the mass of testimony obtainable the more apt is our final judgment to be correct. The importance of the laboratory methods lies in that they furnish us with additional and independent evidence, which carefully and critically weighed will often be of great importance in inclining our judgment in the right direction. It follows too, that each practitioner should, so far as possible, be his own microscopist. He alone can estimate with what care and frequency it is worth while making microscopic examinations in any specific case. And certainly he alone must be the judge of the diagnostic value, in any case, of microscopic findings. Even where the examinations to be made demand special training or equipment and must therefore be referred to another, the practitioner should demand of the

laboratory worker merely a statement of the actual findings and should reserve their interpretation and the estimation of their diagnostic significance to himself.

PRACTICE OF MEDICINE AND SURGERY IN THE RUSSO-JAPANESE WAR.*

BY MAJOR CHARLES LYNCH, U. S. A.

The practice of medicine on the Japanese side in the recent war requires but few words of discussion. The contagious diseases encountered have already been described at length under their sanitary aspect, and the methods for the treatment of these, and of pneumonia, rheumatism, and bronchitis, which were frequently seen, do not differ materially from ours. Their constant and intelligent use of the microscope for diagnosis, even well up to the front in the field, is to be commended. Japanese physicians generally are much better instructed in this particular than they are on methods of physical examination. In the latter they are neither very apt, nor accurate in reaching conclusions. The Japanese are peculiarly prone to allow patients with serious illness to assume a sitting position, and I cannot but think that this was a dangerous practice, particularly so as many of these men had bad hearts from beriberi. In all the Japanese hospitals, except the most advanced, separate rooms are provided for the very ill. Without their large personnel this would be impracticable, though it would always, as with them, be much better for the patients. The percentage of deaths from both dysentery and typhoid was rather high, between 7 per cent and 9 per cent in the former and from 15 to 16 per cent in the latter. The Japanese ascribe this to the fact that many of these patients had beriberi and so weak hearts.

No scurvy was seen in the Japanese army except among some prisoners who had been confined at Port Arthur by the Russians. At this fortress hundreds of cases of this disease in the Russian garrison were under treatment at the time of my visit there. On account of their poor ration, scurvy is not particularly uncommon in the Russian army, even in peace. It was rather surprising to learn how soon a great deal of scurvy began to appear among the Russians at Port Arthur; according to the best obtainable information, scurvy was common even as early as May, 1904. Anticipating a long siege, the Russian authorities cut down their rations notably soon after Port Arthur was surrounded. It was the general opinion among the Russian surgeons there that the food supplies available could have been much better utilized. For example, nearly 2,000 horses were captured when Fort Arthur surrendered, which, if they had been killed and issued as a part of the ration, would have been of

*Excerpts from a War Department report on Military Observations during the Russo-Japanese war, which seem of particular interest, as they deal with the medical side of the question in a way much different from the first reports we received.

much service in preserving the health of the soldiers. Russian officers were apparently sufficiently well fed during the siege; at least, not a single case of scurvy was seen in them. Probably no opportunity for the study of scurvy for years to come will approach that given at Port Arthur. All classes of this disease could be seen there—hemorrhages into the skin, hemorrhages into the conjunctiva, effusions into the knee joints, and even separation of the ribs from their cartilages. In nearly all cases, as soon as patients obtained good food in sufficient quantities they rapidly recovered. So far as can be learned, the scurvy in Russian troops was due more to a nitrogenous starvation than to general deficiency in the food supply.

* * * * *

Some of the surgical problems met with in the war are of great interest. Practically all wounds were caused by rifle bullets, shrapnel or shell, explosives, swords and bayonets.

There is considerable difference between the Russian and the Japanese rifles. The former has a caliber of 7.6 millimeters; its cartridge weighs 24 grams. The bullet weighs 14 grams and has a jacket of cupro-nickel. Its initial velocity is 2,015 feet per second. The Japanese rifle is 6.50 millimeters in caliber; the cartridge weighs 22 grams; the charge is 2.10 grams of smokeless powder. The bullet, which weighs 11½ grams, is 32 millimeters long and is made of hard lead, with a German silver jacket. The initial velocity is 2,356 feet per second.

The different initial velocity, etc., of the Japanese, as compared with the Russian rifle bullet, was not found of great importance, so far as the effects produced by it on the tissues of men hit were concerned, though it is possible that more Russian bullets lodged. The difference in caliber of the two rifles was responsible, however, for very great differences in the wounds caused by them. The wounds due to the Russian bullets were always of a much more severe character. While from the surgical standpoint the extremely small caliber of the Japanese rifle is desirable, it is a great question if they have not carried their desire for long range, flat trajectory, and light weight of cartridge too far, and have thus sacrificed the stopping power of the bullet to such an extent that their weapon does not yield the best results in war. Certainly, a man hit with the Japanese bullet will come on when it has passed through his body anywhere, except at a vital point. The wound of entrance of the Russian bullet was naturally of larger size than that of the Japanese, as was also the wound of exit. The greater destructive effect of the former was, however, most manifest when bone tissue was struck in its course through the body. Bone was almost always extensively comminuted, and the wound of exit caused by the bullet after passage through bone was large. In the winter, at least, many rifle bullets, the Russian more than the Japanese, were deformed by striking hard ground

or frozen walls, and wounds produced by such bullets were of course always destructive to both soft and bony tissue on account of the large wounding surface of the missile. Shrapnel bullet wounds were also always of a severe character, both on account of the large size of the shrapnel bullet and because of the material of which it was made—soft lead, which is so liable to deformation. Wounds produced by pieces of shell were even more severe, and frightful injuries were caused by hand grenades. With the last, tissues were so lacerated and torn generally that amputation of injured limbs was almost invariably required. Foreign bodies were not frequently carried into wounds by the Japanese undeformed bullets, and were still more rare with the Russian undeformed bullets. With both deformed they were not uncommon. The shrapnel ball also frequently drove foreign material from the men's clothing into wounds. Fragments of shell sometimes did so, but often tore their way through, carrying everything in their path before them. With hand grenades not only were particles of clothing sometimes carried into wounds by fragments, but stones and dirt were frequently driven in by the explosion.

Whether suppuration occurs in a wound produced by a missile is, of course, dependent both on the character of the missile and also on the subsequent care which the wound receives. My opinion on the efficiency of the means employed in the war to prevent suppuration will soon be expressed, but just at this time only the exact results attained will be recorded. The Japanese surgeons state that, with undeformed Russian bullet-wounds, not more than 20 per cent of wounds of soft parts suppurated; but, from personal experience, it is believed that the figure is much too low and that it should be at least 60 per cent. So far as suppuration was concerned, wounds produced by the Japanese bullet were much less liable to it than were those by the Russian. This was more noticeable when such wounds involved bone as well as soft parts. A number of bone wounds caused by the Japanese bullet were seen, which healed kindly, that must inevitably have suppurated if they had been due to the Russian bullet. In fact practically all bullet wounds involving bone, caused by the Russian bullet, suppurated, while many produced by the Japanese did not do so. The character of wounds produced by most deformed bullets, by shrapnel, pieces of shell, and hand grenades, was such that they almost invariably suppurated. Those due to the first named were less liable to do so, shrapnel wounds somewhat more so, and wounds caused by fragments of shell or hand grenades never escaped suppuration.

* * * * *

Japan may be said to be yet in the pre-surgical stage of her development—that is to say, she has not reached a realization of the beneficent effects of good surgery, and in civil life surgery is a last resort, some-

what as it was with us in pre-antiseptic days. This has resulted in little specialization in surgery, and while many men may be found who have done good work in bacteriology and pathology abroad, few surgeons with foreign instruction are met. This does not apply to surgery of the eye, for which there is apparently great demand in Japan, and in which a number of physicians have specialized and do good work. In general surgery the Japanese invariably adopted the easiest methods mechanically, such as circular amputation, and though perhaps the best organizers in the world in many respects, they did not organize their operating-room staffs, so that much confusion resulted from lack of specialization of duties. The surgeons, too, are apparently rather limited in their methods of surgical treatment. For example, iodoform is universally used for all dressings. They believe, it is true, in antiseptic rather than aseptic methods for war surgery, and they are probably absolutely right in this as a matter of principle, but they pursue routine methods too closely. Army surgeons in any country are naturally in great measure dependent on the general surgical teaching of the country in question. This is quite true in Japan, and the reason that army medical officers are not competent surgical practitioners is not because their teaching and experience are inferior to those of civilian surgeons, but because good surgery has not been imported nor developed in Japan. As a matter of fact, Japanese army medical officers, as a class, are probably better surgeons than are the civilian doctors of that country, as, with the former, war gives surgical opportunities of relative importance, just as it formerly did with us.

My opportunities for the study of surgery, as practiced by the Russians, were fairly good at both Port Arthur and Mukden. Though these did not compare favorably, of course, either in duration or thoroughness, with similar opportunities with the Japanese, it is believed they were sufficient to form just conclusions on the work of the Russians in this line. The Russian surgeons, as is well known, were picked from here, there and everywhere in the Russian Empire. Some of them were surgical specialists, but others were obstetricians, general practitioners, ophthalmologists, etc., and not a few were medical students. The relative surgical ability of these different classes varied very widely, quite in contrast to the Japanese, who were all from the same mold. Speaking generally, there is no doubt but that the Japanese surgeons were superior to the Russians, even with their deficiencies, which have already been discussed. What is needed in war is a high general average in surgical skill rather than a few specially skilled surgeons, as conditions are such that the wounded must necessarily be treated at widely separate points; that fine surgeons would not find a good field for employment cannot be maintained, however. If the Russians had such surgeons they certainly should have been found in the great hospitals at Port

Arthur and Mukden; as a matter of fact, they were not encountered in either place. Russian surgery, as exemplified by presumably as good men as they had at these two towns, was no better than that usually seen in Japanese hospitals. However, it was quite different from the latter in many respects. The Japanese certainly never tried to gain experience at the possible expense of their patients, but whether this was equally true of the Russians is not so clear. The latter were especially inclined to make very long incisions to relieve tension. These were often made without reference to the direction of the muscles, the fibers of which were ruthlessly cut transversely. The worst case of this kind seen must be described. It occurred in a Japanese soldier who had received a bullet wound at Mukden. The bullet entered two inches below the left trochanter, with no wound of exit. The urethra was injured so that there was some hemorrhage from it, and the patient required catheterization. The Russian surgeon, presumably to relieve tension, made a deep, vertical, central abdominal incision three inches long, two other incisions four inches long, parallel with this and two inches from it, on each side, and two other incisions seven inches long, one and one-half inches above and parallel to Poupart's ligament, on each side. Whether this manifested recklessness, or was due to a lack of surgical knowledge is a question, but such practice was so unjustifiable as to be almost criminal.

The Japanese criticise the Russians for their early and radical operations generally. Apparently there was ground for this. Some of the photographs show head wounds where the openings through the skull were entirely too large, and the Russian surgeons removed bullets from the head and from other tissues not infrequently which would much better have been left where they were, as no harm was resulting from their presence. Mechanically, Russian surgical work was somewhat better than Japanese, but they did not equal the latter in surgical cleanliness. The Russians placed their reliance on aseptic rather than antiseptic methods, and their asepsis was not good. While it is believed that the Japanese medical officers always did the best they could for their patients, a little thing showed their thorough army training. This was the classification of their surgical cases, in conversation, and also evidently in thought, as those which were capable of evacuation to the rear and those which were not so.

The Japanese were extremely unfortunate in having a very bad first aid packet. The Japanese soldiers had been fairly well instructed in the application of the first dressing, which, as a rule, was put on by a comrade of the wounded man. Each Japanese soldier was supplied with a packet, and inspections were always made by medical officers before the battle to ascertain that each man had his packet, and that it was in good condition. As has been noted, the Japanese surgeons state that in the Chinese war surgeons were able to give personal attention to a large ma-

jority of the wounded, and that, in consequence, suppuration was relatively uncommon. This is believed to be true, but, in a great war such as the recent one, soldiers must be dependent to a large extent on unskilled first aid, and the packet should be one which the soldier or a comrade may apply without infecting a wound. This was not the case with the Japanese packet, and a great deal of pus infection was without doubt due to its worthlessness for the purpose for which it was used. The Russian first aid packet was much better than the Japanese. It had two large compresses of bichloride gauze, with a layer of cotton interposed, and a bichloride gauze roller bandage. The Russians did not issue the packet to a large percentage of their men, however, and those who had it apparently knew little of the proper methods of applying it. Both the combatants therefore failed to gain the benefits which must have accrued to the wounded from a good first dressing, well and promptly applied. It is hardly necessary to state that the future course of many a wound is absolutely dependent on its proper protection by the first dressing. At dressing stations many wounded were re-dressed by the Japanese. Their small and ineffective first aid packet was of course partly responsible for this, as first dressings, on arrival at dressing stations, were likely to be soaked through with blood, so Japanese surgeons could hardly depend on them to properly protect wounds.

Where possible, the Russians provided separate rooms for dressings and for operations. This was the Japanese custom, with them all dressings being changed, bandages applied, etc., in the operating room. This undoubtedly resulted in pus infection of some clean cases, which would have escaped if a clean operating room had been provided for them. In each of the great war hospitals in Japan it is probable that the best plan would have been to have had an entirely separate staff, operating room, wards, etc., for clean cases. Gloves, as far as was seen, were used neither by Russians nor Japanese. There may be a difference of opinion as to the propriety of wearing gloves for certain operations in civil practice, but in war they would undoubtedly be of the greatest value. Much war surgery requires no particular manual dexterity, and the conditions of life in the field are such that it is practically impossible for surgeons to clean their hands. Irrigation for nearly all wounds was resorted to by the Russians, while it was never employed by the Japanese. Very often with the latter wounds were dressed dry, and when fluid was used this only consisted of bichloride solution squeezed from a wet pledget of gauze. Usually the Russians employed sterilized water for irrigation, but alcohol was sometimes used for this purpose. The Russians uncommonly painted the surface around the wound with iodine. The Japanese never did this; the procedure probably had little practical value. The gauze used by the Japanese was sterilized immediately before use, while the Russians commonly relied on ready

sterilized gauze. Only one article of the Russian surgical equipment requires mention. This is their starch bandage, which is excellent. After application they employ its white surface to note the character of operation and date, using an indelible pencil. This proved very convenient, as a surgeon could see at a glance, in going through a ward, which cases require examination or redressing.

* * * * *

Detailed surgical statistics from which conclusions of value might be made are not available for the Japanese army. It will therefore be necessary to await their publication before anything conclusive can be said on this subject. As stated in another connection, probably no country which has been engaged in war has collected more valuable statistical material than have the Japanese. It is only very recently, however, that they have published their detailed medical records of the Chinese-Japanese war, so it is probable that some years will elapse before their recent vast experience is given to the world. While the Russians must have some interesting material on the surgical history of the war from their side, their organization is such that any publications on this subject must represent individual work rather than that of their medical department as a whole for the entire war. This is not meant to imply that the Russian surgical records will not be valuable in their way, but only to show that they will not be fairly comparable with the Japanese.

According to a statement received from the surgeon-general of the Second Japanese Army, 19 per cent of the wounded of that army recovered in the field, 65 per cent died. These percentages only show what occurred while wounded were under the jurisdiction of the medical department of the Second Army and are therefore of limited value. No general statistics are yet available to show the percentage of wounds followed by suppuration in either the Russian or Japanese army. There is no doubt, however, that neither combatant attained as good results in preventing pus infection as it should have done. There was no hospital gangrene, it is true—one would hardly expect that under modern methods of surgical treatment—but there was a very high percentage of infected cases. In some the type of infection was exceedingly severe. The bacillus pyocyaneus was often responsible in part for the suppuration of wounds.

Some of the causes for suppuration have already been alluded to briefly, but on account of the importance of this subject, even at the risk of repetition, a summary of the more important reasons for infection and noninfection of wounds will now be given. The Japanese had much harder conditions to meet on account of the comparatively large caliber of the Russian bullet, which demanded careful dressing of wounds produced by it in order to prevent suppuration; their first aid

packet was a poor one; there was too much changing of dressings under such conditions that infection of wounds was likely to occur; their practice of not having separate rooms for dressing and for operating was liable to cause infection of previously clean wounds. On the other hand, they had supplied each soldier with a first aid packet, and each man was fairly well instructed in its use with them; men were quickly collected from the battlefields, so that they were not exposed to the many chances of infecting their wounds accidentally; the practice of antiseptic methods in their operating rooms was fairly good, and their surgeons were in sufficient numbers to change dressings under antiseptic precautions. The Russians had injuries to treat which were very much less liable to infection than the Japanese, their tiny entrance and exit bullet wounds sometimes permitting smooth recovery without suppuration and even without dressing; their packet was better, but it was not furnished to a large percentage of soldiers, and men were not generally competent in its application; their wounded often lay on the field for some time, thus increasing the chances of wound infection; their personnel was comparatively small, so that subsequent infection was likely to occur from hurried and careless changing of dressings; their separate dressing and operation rooms are worthy of commendation, though their practice of aseptic methods left much to be desired.

As a general rule, in the field, cases were left far too long without being re-dressed, and this was responsible for a good deal of suppuration which might otherwise have been avoided. This is a condition which must obtain in any great war, however, as the large number of wounded precludes their frequent dressing. Conservatism in operating was carried far by the Japanese—too far, in my opinion. Army work, of course, demands that there be no accumulation at the front of operated cases not able to bear transportation. The Japanese, therefore, sent wounded men to the rear, so far as was possible, only operating on them when their condition absolutely demanded it. This practice was justifiable under the circumstances, but they not infrequently allowed men, after they had been received in hospitals which were prepared to do all needful operating, to go through a long siege of suppuration rather than do simple operations for the removal of dead bones, foreign bodies, and the like. As has been intimated, the Russians erred, rather in the opposite direction, being inclined to operate unnecessarily on cases which would much better have been left till a later date.

The most interesting cases observed, from a surgical standpoint, were false aneurysms (which, it will be remembered, were common in the Boer war), osteomyelitis, and repairs of deformities. Though primary hemorrhage was very rarely responsible for deaths on the firing line, false aneurysms were frequently produced by the small-caliber bullet touching an artery in its passage through the body. Arterio-venous

aneurysms were also not uncommon. False aneurysms seen were practically all of the circumscribed variety. Out of the first 1,000 cases operated on in the great Japanese hospital at Hiroshima, the surgeon in charge stated that 102 were aneurysms of one kind or another. The usual method of operation for aneurysm was to cut down and ligate at both ends, turning out the clot. The results obtained are said to have been good. Wounds of bone, with resulting osteomyelitis, were, of course, exceedingly common. The explosive effect of the Russian bullet at short ranges was marked. Many deformities necessarily required repair, but, as new methods were not generally adopted in doing this work, they hardly merit description. Some exceedingly clever operations were made in this line at the German Red Cross branch of the Tokyo reserve hospital. One which especially attracted attention was the repair of a man's nose by taking needed cartilage from a costal cartilage.

A few interesting cases of wounds of joints were seen which were remarkable on account of the small interference with the functions of the joint produced by the Japanese small-caliber bullet. In one such case in the hospital at Mukden station the bullet had perforated the patella at about the center, then going through the knee joint and the head of the tibia. There was no suppuration, and after three weeks motion in the joint was little limited. High gunshot wounds of the thigh are (little limited) so often followed by fatal results, even under the best methods of treatment, that it is noteworthy that many such cases were observed going on to recovery in the Japanese hospitals.

The hospital at Mukden station afforded quite a wonderful opportunity for study of gunshot wounds of the head. There were 77 of these, in 56 of which the brain had been injured. Twenty-two, or $37\frac{1}{2}$ per cent. died; 8.8 per cent recovered sufficiently to be evacuated to the rear, and the remainder were under treatment at the date of observation. A great many of these cases had large cerebral hernias, which were due, in part, to the large openings which the Russian surgeons had made through the skull. Hernia cerebri was very fatal in the Japanese hospitals, generally, but a number of these cases probably recovered ultimately. Some of the brain cases were remarkable in that a considerable amount of brain was destroyed without great interference with function. Nothing of interest was observed in reference to the various brain centers. Opportunity for their close study was hardly given, however, on account of the extreme difficulties in interpreting through two languages.

Wounds of the chest proved much more serious injuries than those due to the Mauser bullet in the Philippines. Abdominal wounds were universally treated on the expectant plan by the Japanese. The Russians are said to have attempted early operation for them to some ex-

tent at Port Arthur, but to have abandoned this procedure on account of their bad results. Numerous statements have been made that, during the war, abdominal wounds were often followed by recovery without operation, but this was not my personal experience. At Mukden, certainly, a very large percentage of such died. It would have been absolutely unjustifiable, however, for either the Russians or the Japanese to have operated on them with their methods of asepsis and antiseptics.

A great many curious wounds were seen, but none of these requires particular mention. At all the hospitals in Japan where surgical work was done numerous foreign bodies which had been removed from wounds were on exhibition in cases. Though, as has been mentioned elsewhere, the Japanese had an x-ray apparatus at one of the division field hospitals, this was very rarely used, and it is doubtful if it was necessary to carry its extra weight; at home, however, the x-ray apparatus proved of considerable value.

On account of the climatic conditions under which some of the battles were fought, a number of cases of frost-bite occurred. At the fierce fight at Heikotia, in the last few days of January, 1905, some hundreds of Japanese were so badly frost-bitten that amputation of limbs was required for all of them. The weather was extremely cold there, and the lines of the opposing forces were so close together that it was impossible to collect promptly all those hit. Wounded were usually found to suffer frost-bite in an injured limb, because of interference with the circulation from the injury. The Russians stated that they had much more suppuration in winter than in summer, and it is probable that this was also true for the Japanese. Whether devitalization of wounded tissue by cold had anything to do with promoting the formation of pus in the cold weather is an interesting question, but one to which no answer can be supplied. In all cases of frost-bite the Japanese allowed the line of demarkation to form before performing amputation, as they believed that it was thus possible to save more tissue. These cases were never made emergency operations, as it was not considered that they involved danger to life.

According to the Japanese official records but 0.35 per cent of all sickness in the Russo-Japanese war was due to frost-bite, while in the Chinese-Japanese war 4.21 per cent was ascribed to this cause.

Since the recent war closed the Japanese authorities have published some interesting statements on the comparative results of treatment. In the Chinese-Japanese war, of sick and wounded treated in hospital 50.94 per cent recovered completely and 14.24 per cent died, while in the Russo-Japanese war 54.81 per cent recovered completely and 7.65 per cent died. On the whole, with wounded alone the improvement was not so notable. It is true that in the later war 71.58 per cent of wounded recovered completely, as compared with 63.23 per cent in the earlier war,

yet, while in the Chinese-Japanese war 7.49 per cent of wounded treated in hospitals died, 8.83 per cent died in the Russo-Japanese war, and considering the difference which must have existed in the character of the wounds in the two wars, this is not a favorable showing for the last conflict. My opinion of the reasons for this result have already been stated. Apparently the Japanese ascribe it to the inability of their surgeons in the Russo-Japanese war to give personal attention to wounded to the extent they did in the Chinese-Japanese war, both because the number of wounded was much greater in the former and because the character of the fighting was such, especially at Port Arthur, that wounded men could not be succored promptly.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF
JESSE S. MYER, M. D.

ACUTE DILATATION OF THE STOMACH AND INTESTINES IN A CASE OF MULTIPLE PERIPHERAL NEURITIS.—Weber (*Edinburg Medical Journal*, Apr., 1907).—Patient, 50 years of age, was taken with a sudden pain and swelling of the extremities. Had the feeling of needle pricks in his fingers, hands and feet. Heart and lungs normal, abdomen markedly distended. Both the upper and lower extremities showed a slight degree of paresis and anesthesia. Patellar reflexes absent, sphincter of the bowel not involved. Patient received strychnine and injections without benefit. One week later developed a severe pain in the umbilical region and vomiting of blood. The abdomen distended more and more. Death occurred suddenly before operation. The autopsy showed an enormous dilatation of the stomach and small intestines; mucous membranes of the stomach were anemic, thickened and showed a chronic inflammation. The hemorrhage was caused by varicosities of the esophagus and pharynx, cirrhosis of the liver.

The case is regarded by the writer as a neuritis of the vagi, which produced a paralysis of the intestinal tract and final heart paralysis, causing sudden death.

STATISTICS IN CARCINOMA OF THE STOMACH AND INTESTINES.—Wiley (*Muenchner Medizinische Wochenschrift*, 1907, No. 7).—The writer reports 800 cases of carcinoma of the stomach and 150 cases of carcinoma of the intestines in the Breslauer Clinic, from 1891 to 1906. A plea is made for the early diagnosis and operation of these cases. Exploratory incision is indicated in every case, except those with a metastasis and with complicated diseases, as tuberculosis, nephritis, etc. The difficulty of diagnosis and the loss of valuable time in the attempt to make too exact a diagnosis is discussed. Time does not, however, according to the writer, offer a contra-indication. Seventy-seven per cent of the stomach and 56 per cent of the intestinal carcinoma cases were inoperable after a period of three months, while 27 per cent and 46 per cent respectively were operable after a duration of a year. Resection of the pylorus was done in 163 cases, with a mortality of 35 per cent. This included nine cases of resection of the colon, 36 cases of resection of the pancreas, 4 cases with involvement of the liver, and 4 with adhesions of the abdominal wall. Of 119 cases operated between 1890 and 1902, 13 per cent were well after three years. The intestinal carcinoma showed even a better result in that 40 per cent were free from return.

SQUAMOUS CELLED CARCINOMA OF THE STOMACH AND ESOPHAGUS IMITATING TUBERCULOUS ULCERATION OF THE INTESTINE.—Rollaston (*British Medical Journal*, June, 1907).—Case is of interest in that patient

had an advanced carcinoma of the stomach and a secondary growth in the esophagus with intestinal hemorrhage, without hematesis. This, together with the finding of supposed tubercle bacilli in the sputum, caused a diagnosis of tuberculous ulceration of the intestines to be made.

Patient 40 years old, a severe hemorrhage in the bowel, nothing could be palpated in the abdomen. Second day another hemorrhage. Sputum showed tubercle bacilli, and temperature 102° noted for some days. Patient died in three weeks. Autopsy revealed an immense carcinoma and fungus in stomach, measuring 3 to 4 inches in diameter. On the under surface of the left lobe of the liver a growth was adherent and communicated with a necrotic cavity in the liver. The lower end of the esophagus was filled by an oval polypoid mass. Between the esophagus and stomach tumor, the mucosa was normal. The bacilli in the sputum, diagnosed as tubercle bacilli, were found present in the tumor mass. An attempt to grow them failed.

PHTHISIO THERAPY BY MEANS OF EMULSION BACILLI (Koch).—Meyer (*Medical Record*, Sept. 14, 1907).—Meyer reports 25 cases in which the treatment with the emulsion bacilli gave splendid results. In the table given in the article he divided the cases into three classes—those of moderate severity, patients having taken previously a climatic cure, but relapsed. Secondly, cases of moderate involvement with no previous symptoms, and thirdly, cases of very little involvement, mostly apical and one-sided.

In the first class only one case failed to improve, while in the second and third classes all cases were either cured or greatly benefited.

The writer concludes that an early diagnosis gives the greatest assurance of an early permanent cure, for the advanced cases are generally hopeless and second stage cases doubtful. The cure is possible by tuberculin, but the permanency of such a cure is still in doubt. While no ill effects have followed large doses, nevertheless one should guard against giving them for fear of producing too severe a reaction. Symptoms very alarming to both patient and physicians usually follow large doses. In fever cases very minute doses have a tendency to reduce temperature. The bacilli usually increase in number first and cough may be more severe for a time, but improvement is more rapid. An increase in weight is noted early and general improvement in all symptoms. This proves conclusively that patients, while remaining at home and at work, can take the tuberculin treatment with benefit.

RELATION OF IODINE TO PARATHYROID.—Estis and Cecil (*Bulletin Johns Hopkins Hospital*, Sept., 1907).—After careful examination and repeated investigations of the parathyroid of dogs, cows, horses, sheep and man, the writers come to the conclusion that the presence of iodine in this gland is in such trifling amount as to be insignificant. The Baumann method of determining iodine was employed. Iodine is always present in large quantities in the thyroid gland and they have concluded in their findings that those cases in which iodine has been found in the parathyroid were due to faulty technique and included some thyroid tissue.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF
CARL FISCH, M. D.

RELATION OF INTESTINAL INFECTION TO VISCERAL TUBERCULOSIS.—Whipple (*Bul. Johns Hopkins Hospital*, Sept., 1907).—The question of primary entrance of tubercle bacilli through the gastric and intestinal mucosa, leaving the latter and even sometimes the intestinal glands intact, has been a very much discussed problem of late. The tendency of opinion seems to be that such an entrance is possible and that pulmonary disease can obtain without any evidence of its course from the intestine to the lungs. It has been maintained that tubercle-ingested bacilli penetrate through the mucosa in a short time, pass through the lymphatics, and are found in the thoracic duct in an hour or so after ingestion. A priori, the possibility of such a process cannot be excluded, although similar conditions for pigment ingestion maintained by Calmette and others have directly and conclusively been disproved. Whipple undertook the investigation by a method that guaranteed a high degree of certainty. The tubercle bacilli were either injected directly into stomach or intestine after a laparotomy (dogs, rabbits, guinea pigs), or enclosed in capsules and pushed down deep into the œsophagus. At different times these animals were killed and the presence of tubercle bacilli in glands, ducts, etc., determined by inoculation of guinea pigs. The results have been negative in all cases, which leads the author to the following conclusions:

The tubercle bacillus cannot pass from the intestine through the lacteals, mesenteric glands and thoracic duct into the lungs without leaving some record of such passage; a few bacilli, under favorable conditions, may be swept along this course to the lungs, but the majority will certainly lodge in the glands and in time cause a tuberculous process, which can be recognized. When the mesenteric glands are not involved, we may exclude the intestinal tract as the port of entry, but the converse does not hold good for the tuberculous mesenteric glands, which may be secondary to some pulmonary focus that is discharging tubercle bacilli into the alimentary tract. The thoracic duct is often the distributing agent in cases which show scattered tubercles in the viscera and tuberculous mesenteric glands.

DISSOCIATED SUBCUTANEOUS FAT NECROSIS OCCURRING IN AN INFANT WITHOUT OTHER LESIONS.—Marshall Fabry (*Bull. Johns Hopkins Hosp.*, September, 1907).—According to Opie, fat necrosis is in all cases due to pancreatic disease, while its conception primarily is that of a disease-entity. Certainly cases have been reported where the pancreas was entirely normal. Chiari has compared the condition to a retrograde metamorphosis in which a degenerative process in a tissue is followed by a necrosis. It is true that in all cases the fat-splitting ferment plays a decisive part, as shown, for instance, by Flexner. On the other hand, fat necrosis occurs without lesions of the pancreas in the fat tissues surrounding the organ, and also in localities very distant from it, for in-

stance, the skin. The first case of a subcutaneous fat necrosis was published by Hansemann (normal pancreas); later disseminated fat necrosis with normal pancreas was observed by Fraenkel and Flexner. Fabyan adds a very interesting observation of disseminated subcutaneous necrosis in an infant 14 days old. On the third day of life, numerous lesions, called abscesses, were seen on both cheeks, forearms, back of head, buttock and right lower leg. Most of them faded away and were absorbed. Only the abscess of the right cheek remained; it was punctured by the attending physician. Some "pus" was removed that in cultures was found to be sterile. On the 14th day the child died by accident from asphyxiation. The autopsy revealed normal conditions except a few ecchymoses on pericardium and pleura and a large ball of inspissated casein in the stomach. The lesions of the skin were situated on right cheek (large), on right arm and leg. All represented typical foci of fat-necrosis. The pancreas was perfectly normal and the surrounding fat tissue did not show any anomaly. On account of the neighborhood of the cheek lesion to the parotid, the author thinks of the possibility that the gland in infancy might be a producer of lipolysin. The similarity of structure between it and that of the pancreas suggests this possibility to him.

THE PRACTICAL APPLICATION OF THE DEMONSTRATION OF SPIROCHAETE PALLIDA IN A LARGE HOSPITAL.—Arning and Klein (*Deutsch. Med. Woch.*, 1907, No. 37).—No matter what the opinion may be about the etiologic part that spirochaete pallida plays in lues, it is generally accepted that its demonstration in suspected cases is always a positive proof for the presence of this infection. The demonstration, moreover, clears up many obscure and indefinite conditions, while its absence excludes in most cases, although not always, a luetic process. Up to a year ago, when the methods for demonstration were imperfect and tedious, when a thorough knowledge about the necessary precautions and steps in obtaining suitable material were not developed, failures were many and therefore the importance of this demonstration was only slightly appreciated. By improved methods—particularly by the new Giemsa method—and by a clearer understanding of the behavior of the spirochaete in syphilitic tissue under influences of medication or other external or internal activities, the demonstration has now become a routine procedure, manageable by anybody who once has had impressed upon his mind and eye the characteristic picture of the organism. Arning and Klein, at the General Hospital in Hamburg, since October, 1906, have examined every case of clinically patent or of only suspected syphilis, for spirochaete pallida. The results have been positive in almost all cases. Of 140 cases of primary lesions, all but four showed the presence of the organism; the four negative ones had been, at the time of the examination, under specific treatment. Of secondary, papular and other lesions, 242 were carefully examined with a positive result in 235. The cause of the failure in the others was the specific treatment. In one of the failures in the series of primary lesions the spirochaete had been demonstrated some days before entrance into the hospital. In this time the patient received treatment, but at the hospital no spirochaete could be found. The authors add to this list, at the time of publication,

200 more cases in which the results were about the same. The important point is that the failures can be explained easily by the influences that have acted on the patient in the above mentioned way. The demonstration of spirochaete has today become the strongest factor in diagnosis for a great number of suspicious conditions. In clinically typical cases, of course, it is only confirmatory. The main value lies in the early recognition of the infection, which we have every reason to believe will result in mitigating the character of the general infection.

DIAGNOSIS.

IN CHARGE OF
ALBERT E. TAUSSIG, M. D.

THE THREE LONG-CONTINUED FEVERS OF NEW ENGLAND.—Cabot (*Boston M. and S. J.*, 1907, CLVII., No. 9).—In an address delivered before the New Hampshire Medical Society, Dr. Cabot made some interesting statements based upon the large material of the Massachusetts General Hospital. In New England (and the same observation doubtless holds true of all but the southern fringe of the United States) over 90 per cent. of all continued fevers of more than two weeks' duration are either tuberculosis, typhoid, or sepsis. Meningitis, influenza, grippe and a large number of rarer diseases go to make up the remaining 10 per cent. A frequent source of error in the diagnosis of these long-continued fevers is the failure to recognize beginning tuberculosis by reason, first of all, of paying too much attention to the symptoms and not enough to the signs; too much attention to what the patient says and not enough to what we find on examination. Cases of pulmonary tuberculosis occur occasionally in which the patient does not cough until the disease is well advanced. Such cases are often called malaria, especially if the patient has a chill every day at the same time, or typhoid fever if the temperature is continuously high. An examination of the blood should always enable us to exclude the former, and a careful study of the case the latter. At Saranac, a useful modification of the usual procedure for bringing out crackling rales at the apex in beginning pulmonary tuberculosis is practiced. The patient is made to take a long inspiration, then a full expiration and coughs at the end of the expiration. This will stir up rales and make them audible when nothing else will do so.

In typhoid fever the importance of negative evidence is very great. In the majority of cases it presents the picture of a patient who has fever and nothing to show for it. Constipation is usual, splenic tumor and sore spots are often lacking, and while blood examination, especially blood cultures, usually gives definite information, it is of all the fevers the one that most often shows nothing on ordinary examination.

Sepsis is usually diagnosed rightly because it has an obvious focus somewhere. The occasional mistakes in diagnosis are most apt to concern the liver. Abscess of the liver, whatever its source, often gives rise to no local symptoms whatever, no pain, no tenderness, nothing but a fever. Cases of unexplained fever after operations for appendicitis turn out generally

to be abscess of the liver. Affections of the gall-bladder too are often complicated by liver abscess, and subphrenic abscess due to gastric ulcer are not rare. All of these sometimes give no local symptoms. Then there are the unrecognized cases of empyema following pneumonia. The vast majority of cases of unresolved pneumonia are really empyema. Whenever pneumonia lasts more than ten days an empyema is probably present. In these cases exploratory puncture ought to set us right, but Cabot believes that the diagnosis of empyema should never be excluded unless the chest has been opened, a rib removed and a thorough exploration made.

BACTERIOLOGICAL EXAMINATION OF THE FECES AS A MEANS OF EARLY DIAGNOSIS IN TUBERCULOSIS.—M. Solis-Cohen (*N. Y. Med. J.*, 1907, No. 34).—The writer reports six obscure cases in all which the diagnosis was made possible only by finding tubercle bacilli in the stool. One of them was a case of miliary tuberculosis, while in five there were obscure pulmonary lesions, though no tubercle bacilli were found in the sputum. The writer believes that in early pulmonary tuberculosis, where the sputum is either absent or free that tubercle bacilli, an examination of the feces for tubercle bacilli may clear up the case.

A NEW TEST OF GASTRIC MOTILITY.—Strauss and Leva (*Deutsch. med. Wochenschr.*, 1907, No. 29).—In place of Sahli's flour and butter soup, which has been found wanting in several particulars, the writers suggest the use of a butter biscuit. This can be bought in pieces made for this purpose, weighing 50 grams and containing a definite amount of butter-fat. The fat seems permanently bound to the starchy constituents. Strauss's procedure in general is that of Sahli, except that he removes the entire gastric contents and determines the fat by means of a refractometer. For details the original article must be consulted. In general it may be said that the motor phenomena that take place within the stomach during the process of digestion are apparently so complex, that no method based on fat determinations can be expected to yield results of a value corresponding to the labor involved.

X-RAY IN THE DIAGNOSIS OF GASTRIC AND INTESTINAL DISEASE.—Jolasse (*Muench. med. Wochenschr.*, 1907, No. 29).—The size, shape and position of the stomach can best be determined by means of a radiosopic examination after the administration of a special meal containing bismuth subnitrate. The shape and position of the stomach are shown by means of the black shadow cast on the screen by the bismuth, while the disappearance from the gastric region of this shadow gives information concerning the gastric motility. Any shadow remaining after three hours should be considered abnormal. If the bismuth is administered in a capsule of gold-beaters' skin, the digestive power of the gastric juice may be measured. The bismuth shadow, which at first appears as a small black spot, will spread over the entire gastric area when the gold-beaters's skin has been digested. This takes place in two and a half hours if the gastric secretion is normal. One and a half hours indicate hyperacidity and five hours anacidity. In gastric ulcer the position of the lesion can sometimes be made out by the bismuth which adheres to the ulcerated area.

THE EARLY DIAGNOSIS OF CHRONIC PULMONARY TUBERCULOSIS.—Tatusescu (Rev. *Stuent. Med.*, 1907, No. 1; *Internat. Centralbl. f. d. ges. Tuberk. Forsch.*, Vol. II., No. 1).—The writer describes three neurologic signs of incipient phthisis:

(1.) The brachial plexus sign. Firm pressure over the lower third of the sterno-cleido-mastoid muscle causes a pain which is more marked on the side of the pulmonary lesion. The explanation of this phenomenon consists in the production of a slight neuritis in the brachial plexus by the tuberculous pulmonary apex.

(2.) The cubital nerve sign. When the two epicondyles are rubbed, the tuberculous patient will experience a sensation of pain more marked on the side corresponding to the pulmonary lesion.

(3.) The amyotrophy of de Broix. This consists in a muscular atrophy in the region of the tuberculous apex.

These signs are significant only when the pulmonary affection is unilateral.

GROCCO'S TRIANGLE IN EXUDATIVE PLEURISY.—Padoa (*Gaz. d. Osped.*, 1907, No. 33).—It will be remembered that in 1902 Grocco and, somewhat later, Koranyi called attention to a triangular area of dullness occurring in cases of pleuritic effusion, along the spinal column on the healthy side. The most rational explanation of this phenomenon consists in the assumption that the effusion pushes the mediastinum away so that it comes, at least in part, to lie on the other side of the spinal column. Clinicians who claim to have observed this sign in pneumonia were apparently led astray by a simultaneous but overlooked pleuritic effusion. Interesting observations have been made in double pleurisies in which Grocco's Triangle shifts from one side to the other in proportion as one or the other effusion attains the higher level.

THERAPEUTICS.

IN CHARGE OF
WILLIAM ENGELBACH, M. D.

PHTHISIOOTHERAPY BY MEANS OF EMULSION BACILLI (Koch).—Meyer (*Medical Record*, September 14, 1907).—The author states that adverse criticisms of tuberculin which are encountered in the literature of today should be based on a more careful and conservative investigation on the part of the opponent. His own experience with both the old tuberculin (for diagnostic purposes) and the new tuberculin (emulsion bacilli) as a curative agent was strengthened by German and French physicians as well as Trudeau, Brown, Pogue of this country. Even if the results are not entirely satisfactory, and in spite of the fact that not enough time has elapsed to assure the permanency of the effects obtained, he maintains that the curative properties of tuberculin is unquestionable. There was also no doubt as to the diagnostic value of tuberculin in cases in which the physical signs were practically absent. His treatment was as follows: Pulse

and temperature was taken before the injection and again from 12 to 24 hours afterward. The initial dose of the emulsion is 0.0005 mgm., slowly increased to 5 and at times to 20 mgm.; the latter is given rarely. Injections are made on the average once a week, in a few cases twice a week for one or two months, then bi-weekly until the cure is completed (five to seven months). Some patients reach a dose of 1 to 2 mgm. only as the maximum dose in their case. If possible I avoid all reactions and I succeed in the majority of cases by the above doses. The weight, pulse, temperature, and general condition form the guide to the dosage. The average duration of the treatment is from five to seven months, with occasional exceptions. He presents 25 cases of working patients in which no other remedy than tuberculin was employed. His personal conclusions are as follows: (1) An early diagnosis gives the greatest assurance of an early permanent cure (tuberculin being the means of such diagnosis); (2) the selection of cases has a direct bearing on the results; far advanced cases are generally hopeless and second-stage cases doubtful; (3) a cure is possible by means of tuberculin, but the permanency of such cure is sub judice at present; (4) the dose is to be guarded in order to avoid reaction of a severe type and the intervals between the injections should be regulated according to reaction; (5) no ill effects have followed large doses, even in the beginning of treatment; but it is advisable to give small doses, since the larger doses may cause symptoms which alarm both patient and physician; (6) in fever cases very minute doses have a tendency to reduce temperature; three of the twenty-five cases have acted that way; (7) bacilli usually increase in number at first, and cough may be more severe for a time, but the improvement is early and rapid; (8) under tuberculin the weight increases and the general condition improves, the symptoms disappear, and the patient feels in every respect better; this naturally pertains only to certain well-chosen cases; (9) these observations have conclusively shown that patients while remaining at home and at work can take the tuberculin treatment and receive a great deal of benefit from it.

THE USE AND ABUSE OF CARDIAC STIMULANTS.—Hare (*Therapeutic Gazette*, August, 1907).—In this article the author discusses the common disregard of certain essential details concerning the action of cardiac stimulants. Physicians themselves probably suffer more as a class from this abuse. The "tired heart" commonly existing among physicians usually receives at their hand excessive doses of digitalis instead of the indicated rest. Strong coffee and other adjuncts are also self-prescribed, causing an increase of the cardiac disorder. Another erroneous use of cardiac stimulants is their employment in a state of undue excitation in which condition cardiac sedatives are needed. Not uncommonly cardiac irregularity calls for small doses of aconite or veratrum viride. Again a patient with feeble heart receives digitalis when in reality the cause of the feebleness lies in a degenerated heart muscle, which is incapable of gaining any advantage from this drug. In fact by contracting a blood vessel digitalis increases the labor of the heart. Under these circumstances trophanthus or cactus, the action of which is cardiac, but slightly if at all vascular, should be used. Digitalis is also given in small doses in cases of failing heart, when the chief cause of the failure lies not in the heart itself, but is due to a higher arterial spasm or atheroma. In such cases if digitalis is given

for the heart muscle its vascular effect in the already existing normal tension must be simultaneously relieved by the use of vascular relaxants such as the nitrites. It is also well before using powerful heart tonics to determine if possible any cause which if removed would thereby relieve the condition. The prohibition of the excessive use of tobacco with alcoholic drinks, of excessive feeding or sexual excitement, will be the means of dispensing with cardiac tonics.

THE ACTION OF THIOSINAMIN IN SCLEROSIS OF THE CARDIO-VASCULAR SYSTEM.—Renon (*Soc. de Ther.*, June 25, 1907).—The author has studied the effects of thiosinamin upon arteriosclerosis and fibrous changes of the heart valves and vessels for a number of years. In mitral affections (stenosis and insufficiency), he observed no marked effect. On the contrary in atheroma of the aorta the functional symptoms were favorably influenced, while the physical findings (murmur) were not modified. In arteriosclerosis subjective symptoms were less markedly affected than in atheroma of the aorta. In some cases the dyspnea and blood pressure were decreased. He gave injections of 5 ccm. of a 4 per cent solution daily for 25 to 30 days. They were given in the subcutaneous tissue of the abdomen without pain or other untoward symptoms. Frequently following the injection there was a marked decrease in the subjective symptoms and blood pressure.

THE TREATMENT OF HEADACHES.—Robinson (*Monthly Cyclopaedia of Practical Medicine*, May, 1907; *Ref. Med. Rev. of Revs.*) states that, to begin with, the etiology must always be considered and the cause banished, if good results are possible. Anaemia must be cured, gout or rheumatism specifically treated as far as may be, febrile conditions ameliorated, and then with proper time the patient recovers—it may be altogether, it may be only for a time. If an alcohol habit be marked, it should be interdicted, and tobacco excess moderated. Lead poisoning of certain trades, manifest malarial cachexia, insufficient renal elimination, with premonitory headache of uraemia, are all to be properly treated, or else headache continues. When syphilis is present and there is nocturnal headache with insomnia, iodides in increasing doses are our mainstay. Nasal obstruction, adenoids and hypertrophied tonsils must be removed. A sagging or retroverted uterus should be raised or replaced in normal position. Errors of menstruation must be corrected by general and, in minor degree, by local measures. But when we reach digestive disturbances, acute or chronic, we touch really the keynote of very many headaches. An error of diet, some special food, or merely a surfeit of too many foods, will give a headache, which five grains of blue mass, followed by a saline draught, will alone relieve effectually and rapidly. A neuropathic condition is shown to be the efficient cause of very many, indeed the greater number of miserable headaches. The most prevailing symptom accompanying the headache is disordered digestion—dyspepsia, constipation, diarrhea. Proper neutralization and elimination through the digestive tract can usually be of primary and greatest service. And here, particularly, we would lay great stress upon the sour milk diet and the moderate use, morning and night, of sulphate of soda. When we come to relieve migraine, we can do little more or better. No treatment will surely prevent the return of the

paroxysms, simply because we have here to do with a constitutional neurosis, in which heredity is the ruling power. A permanent and absolute cure is a difficult undertaking, and to be fair to our patients they should be informed of this fact. In most cases of sick headache the final and only appeal left us is, unfortunately, the hypodermic administration of morphine.

SURGERY.

IN CHARGE OF
MALVERN B. CLOPTON, M. D.

BRAIN-PUNCTURE.—Pollack (*Mit. a. d. Grenz. d. Med. u. Chir.*, Bd. 18, Hft. 1).—This method, first introduced by Neisser in 1904, is not to be confused with the suggestion of A. Kocher, to make a small opening in the skull for the purpose of injecting tetanus antitoxin into the lateral ventricles, as the purpose of brain puncture is to attempt to remove something and on the findings base a diagnosis. With the patient in a semi-reclining position, to partially exsanguinate the meninges, a small opening is made through the skull by a motor-driven drill of small calibre, and through this a narrow-walled canula is inserted for the diagnosis of underlying conditions. A general anesthetic is very rarely necessary, but if used a few drops of chloroform are given, more as a suggestive narcosis; or, as some authors have suggested, a local injection of cocain is useful. A blunt-pointed needle is used for the determination of extradural hemorrhage, while a sharp canula is used when it is necessary to puncture the dura; and if it is necessary to aspirate, a Luer syringe is used. The method was originally proposed to aid in the diagnosis of brain abscess, epi- and subdural hematomas, brain cysts and tumors. It is now extended to include prognostic and therapeutic indications. One case of extradural hemorrhage coming on slowly after an injury, was explored in two places; in the first instance clear serum was encountered, which made them believe that the bleeding was stopped, and at the second puncture the clot was encountered and removed by aspiration, with no return of any trouble within a year. By this method they expect to make it unnecessary for exploratory craniotomy on both sides of the skull in cases difficult to diagnose, to locate operable conditions so that the operation need not be very extensive. This applies particularly to cysts and tumors of the cerebellum, in that they are most frequently hard to localize or diagnosticate. In cysts it is possible to relieve the condition as well as make a diagnosis. One case is cited in which a cyst was punctured seven times through the intact skull in a period of one and a quarter years, 250 c.c. of clear fluid having been removed in that time, and the case has remained well for over three years. There are several series of brain tumors reported in which the puncture had made a diagnosis, an operation following in favorable cases, and the excellent results of operation are claimed to depend on the knowledge gained by the preliminary puncture. Old hemorrhages when aspirated are diagnosed by the reddish yellow fluid withdrawn in which are brownish flakes, seen through the microscope.

Increased intracranial tension is one of the most beneficial effects of puncture. More recently the method has been used to puncture the lateral and the fourth ventricles for primary hydrocephalus internus and secondary hydrocephalus after plugging of the veins of Galen, or closure of the aqueduct of Sylvius. They have also tapped the ventricles in a case of genuine epilepsy, removing a reagent glassful of fluid on several occasions, each time relieving a violent headache and making the patient feel much better. They suggest many experiments which they have tried, or will try, to show that the foramen of Magendie is open or closed by a growth or disease, by using lumbar puncture in conjunction with ventricle puncture. They have also shown the connection between the lateral ventricles by introducing methylene blue into one ventricle and removing it from the other.

INTRAPERITONEAL INJECTION OF OXYGEN FOR TUBERCULOUS ASCITES.—Schulze (*Mit. d. d. Grenz. d. Med. u. Chir.*, Bd. 18, Hft. 1).—A comparison of the various forms of treatment for tuberculosis of the peritoneum, and the theories which account for the cures after exploratory laparotomies, precedes the presentation of the method of Meyer and Schmidt, of injecting oxygen after the aspiration of tuberculous ascites. Reasoning from the fact that a fairly large proportion of the operated cases recover, and remain free from ascites, and knowing that simple aspiration of fluid is rapidly followed by its return, they decided to combine the subsequent injection of oxygen after aspiration to imitate the entrance of air during operation. The report is based on six cases so treated over a year and a half ago. All remain alive and are able to work. Five received only one puncture and oxygen injection, one case receiving two, the latter having had a laparotomy previous to the first injection. In one case the tumor masses entirely disappeared, and in another they ceased to give trouble. In all the cases the injection was supposed to do good; in half of the cases there was a reaction immediately following, such as pain or vomiting, the fluid slightly increased, but later the ascites was entirely absorbed. Late recurrences were not met, but one case was aspirated and injected twice within a short period. No attempt is made to explain whether the effect is from the hyperemia, or by the chemical effect on the bacteria. The abdomen is tapped with a trochar and canula, about 1000 to 1500 c.c. of fluid removed, and then the same amount of oxygen is injected, under two to three atmospheres of pressure. The oxygen is made fresh from potassium chloride and potassium permanganate.

NOTES ON THYROID TUMORS.—Barker (*Practitioner*, Sept., 1907).—In considering the kind of anesthesia to use in removing thyroid tumor the choice is given to a local anesthetic which gives a most effective analgesia, and is applied by a method rather different from that ordinarily practiced. A two per thousand of B. Eucaïne in normal saline is prepared fresh by adding a powder containing 3 grains of sodium chloride to 3½ ounces of water, which is boiled in a glass flask for a few minutes, then cooled to blood heat. To this, when cooled, is added 10 drops of 1-1000 adrenal chloride. A line following Kocher's incision is injected in the skin with an ordinary hypodermic needle. A blunt, probe-pointed,

long needle is then used, with a lateral opening near the point. It is thrust through a small opening into the subcutaneous tissues and about 30 c.c. of the solution is injected across the neck; then the solution is injected upward, outward and downward from the outer end of the incision. The fluid thus diffused will cause an artificial edema, which will cross the track of most of the cervical nerves supplying the skin in the field of operation. A further injection is made around the capsule of the gland on both sides. These injections, which may use as much as 150 c.c. of fluid, are made with the patient in bed in the ward. At the end of 40 minutes the anesthesia is at its height and the patient is removed to the operating room where, with a nervous case after a preliminary injection of morphine, the operation is done without pain in an area which has entirely lost its edema, and the field is practically bloodless. Adrenalin delays the effect of B. Eucaïne, but prolongs it up to two and a half hours. He reports twenty-two thyroid operations: every one healed without a flaw, in most without any drainage. It is also noted that hardly any ligatures were employed.

SURGICAL TREATMENT OF EXOPHTHALMIC GOITRE.—A. Kocher (*J. A. M. A.*, Oct. 12, 1907).—Out of 3,460 goitre operations at Berne 315 have been done on 254 patients with exophthalmic goitre. Of the last ninety-one operations performed on sixty-three patients there has not been a death, and of all the 254 patients only nine have died (3.5%). The improvement in death rate is not because severe cases have been refused, but because more prudence has been observed in operating, the technique has been improved, and the various operative procedures, such as ligating the arteries or excision, are done at different sittings. The strength of the heart is considered of the greatest importance. In many cases it is dilated, and if there is compensatory hypertrophy due to tachycardia, blood pressure is increased. A blood pressure of 105 c.m. does not forbid operation if the pressure is proportional to the degree and constancy of the tachycardia. If in a marked development of the disease with low blood pressure, which after exertion is followed by marked cardiac dilation and unmeasurable blood pressure, the case is never submitted to an immediate extensive operation. In a highly vascular gland with marked symptoms, the patient is prepared merely for a slight operation. In fifty-eight cases the blood was carefully studied and showed a marked increase in the number of lymphocytes and a decrease in the polynuclears. The increase of lymphocytes is proportional to the degree of the disease, and if there is no increase of lymphocytes the case is a serious one. Only in early undeveloped cases, or late cured ones, is the lymphocytosis absent. The operation performed by Kocher is usually the enucleation of one lobe. Inasmuch as increased vascularization is necessary for the increase of the disease, ligation of the arteries is sometimes done alone, and sometimes in conjunction with partial excision. There has not been a single case in which the patient has not been benefited by operation. In all cases there has been 83 per cent of cures. There are 73 per cent of cures in the patients with the primary disease; 92 per cent of the cases having the disease combined with ordinary goitre, and 100 per cent of the patients with vascular goitres. Some of the observations date back seventeen years, and in some of the

most severe cases it took a long time before the heart and eyes became normal. Those coming to operation after a long duration of the disease and secondary changes had taken place, were the hardest to cure. Ten cases were not benefited much, but in them there were symptoms of other diseases.

With careful preliminary observation it was found possible to operate in nearly every case. Repeated operations, with patients under observation in the meantime, are necessary in some cases. More than two arteries should never be ligated at one session. To remove more than half the gland at one sitting is dangerous, and it is rare that this is ever wanted. In the presence of distinct vascular symptoms one should operate immediately, ligating two arteries, or excising half of the gland. When at the height of the distressing disease, operation is not advisable. Operation is best done under cocaine. Immediate post-operative increase of disease is thought to come from expression of toxin in the gland.

SURGICAL TREATMENT OF DYSENTERY.—Curl (*Military Surgeon*, Oct., 1907).—There are three classes in which dysentery cases can be considered, viz: Those which respond to medicinal and dietetic measures (usually early cases); those which come under observation in a weak condition with extensive gut changes, in which the prognosis is always bad; an "intermediate" class, in which changes in the colon are not severe, but in which medicinal treatment does not check the disease, and if left to this kind of treatment, usually die. This last group is the one in which operation is advised, and in most of these it is a *dernier resort*, but offers the only hope of recovery. The author's experience was gained at the Canal Commission Hospital at Colon, Panama, where dysentery is most common, usually amœbic, but some bacillary cases. He also reports on twenty cases operated. He prefers bringing the cecum to the abdominal wound after having removed the appendix, as it can readily be brought into the wound without disturbing the relation of the structures, and because the cecostomy sinus usually closes spontaneously. He objects to bringing the appendix into the wound (appendicostomy) because the lumen may be too small, the distal portion may necrose, and there may be great strain on the cecum in bringing the base of the appendix to the wound, and finally the greater likelihood of a persistence of the sinus after irrigations are stopped. The advantages of using the appendix are that the operation is done quicker, the irrigations of the colon may begin immediately, and fewer and less extensive adhesions are formed in the abdomen. For irrigation he has used 1-3000 to 1-1000 solutions of quinine, and occasionally silver nitrate. Of the twenty cases eleven recovered, two improved, five died, and two are still under treatment. Three cases were operated when very low, and only one rallied for a day or so; in one case the secondary opening in the gut was not made. One death was due to tuberculosis two months later. Those cases recovering showed marked improvement in the first three days, the bowel movement decreased from 20 to 30 to 2 or 3 a day. Some cases relapsed when irrigations were suspended, but cleared up again permanently when resumed.

ORTHOPEDIC SURGERY.

IN CHARGE OF
NATHANIEL ALLISON, M. D.

RIGHT-ANGLED CONTRACTION OF THE TENDON ACHILLES AS A CAUSE OF STUMBLING, ETC., IN CHILDREN.—Tubby (*Brit. Jl. of Children's Dis.*, July, 1907).—The clinical picture presents the following variations: (1) Pain in the calves and round the knees. The child becomes tired in walking, and stumbles and falls on attempting to run. (2) Shambling gait, short steps and bent knees, the bending being increased on taking longer steps. (3) Constant occurrence of sprained ankle. (4) Everted feet; though the arches have not fallen they are often exaggerated. (5) Turning in of the toes, the child walking on the outer side of the foot. All these clinical phases result from a varying degree of loss of the angle of dorsi-flexion of the foot, due to contraction of the calf muscles and tendo-Achillis. This produces shortening of the stride in walking, the patient being in uncertain equilibrium if he attempts to take a long step. If allowed to proceed, the condition develops into ordinary talipes equinus, and recognition and appropriate treatment of these slighter degrees of contraction are essential. In examining the child, the movement of dorsi-flexion of the foot should be slow, gentle, and steady, and one examination is often insufficient to determine the degree of contraction present. The condition is usually due to infantile paralysis, and the difficulty in walking and other symptoms described to the surgeon frequently begin with one of the exanthemata. Another set of causes is associated with throat lesions, and in Anglo-Indian children there is often a history of one or two attacks of "fever." The treatment presents considerable difficulty. If, with the limb fully extended, the foot is incapable of dorsi-flexion beyond a right angle, it is advisable to lengthen the tendo-Achillis. An open operation is recommended, the tendon being lengthened by the Z-shaped method. A transverse incision is made halfway through the tendon, the knife carried vertically downwards for a distance of one to one-half inch, then turned on the flat, the remaining part of the tendon cut through transversely, and the two portions slid upon one another until the desired degree of lengthening is obtained. In cases where there is only a small diminution of five degrees or so of the angle of dorsi-flexion, passive and active movements designed to stretch the contracted structures are advisable, and much assistance is afforded by a boot with a toe-uplifting spring. If these measures fail, recourse may be had to the method of operation described.

CONTINUOUS PASSIVE HYPEREMIA IN DELAYED UNION OF FRACTURES AND IN HASTENING THE CONSOLIDATION OF FRACTURES.—Roberts (*Surg. Gynec. and Obs.*, Sept. 1907).—Although delay in the union of fractures is not of very frequent occurrence, it is satisfactory to have at our service, for such cases, so simple a method of treatment as that recommended by the author. For the last ten years he has advocated the use of passive hyperemia as a means to secure union where the delay is not due to some mechanical condition which would make union impossible. In these cases he advises operative intervention. This topic was thoroughly

described by Helferich, and before him by Dumrieher, but little attention has been paid to it. The work of Bier has again called attention to this form of treatment. The author is of the opinion that it will cause union to take place where non-union is threatened and will encourage union in simple fracture. He advises the use of an elastic bandage, not too tightly applied, but firmly enough to induce a little bluish swelling of the limb below. It should give no pain. The place of constriction should be shifted from time to time and the underlying skin rubbed with alcohol occasionally. This, coupled with a constant outdoor life and good food, will greatly aid the bones to unite after fracture.

GENITO-URINARY SURGERY.

IN CHARGE OF
H. McC. JOHNSON, M. D.

A STUDY OF GONORRHEAL PUS IN STAINING "SERA": WITH SPECIAL REFERENCE TO PHAGOCYTOSIS.—Farve (*Am. Jour. Urology*, Aug., 1907).—The author first discusses the properties of neutralroth, which in acid solution gives a reddish stain, and in slightly alkaline solutions the color imparted is brown. He refers particularly to the manner in which fresh gonorrheal pus acts when placed in an isotonic serum to which has been added a very minute quantity of neutralroth, and reports excellent results from employment of the following solution: Saturated watery solution of neutralroth 1 cc., salt solution 150 cc. The quantity of serum may be carried as high as 200 cc. In daily work the solution is prepared extemporaneously by adding to the serum small doses of the solution of neutralroth until the liquid has taken on a slight yellowish-red tint. A drop of this solution is placed on the hanging-drop slide and a small bit of gonorrheal pus, on a platinum wire, is mixed as intimately as possible with the serum. All lumps should be avoided, representing masses of cells which considerably hinder observation. The cover glass is arranged and held in place with paraffin. Under a high power objective, perfect preservation of the movements of the leucocytes is observed. After a few minutes the stain becomes fixed in the nuclei of the dead cells, which represent about one-tenth of the total number; these cells are round and their protoplasm takes on a yellowish tint. Other leucocytes have totally unstained nuclei and present in their protoplasm stained grains, some being very intensely stained a reddish brown, others being less markedly so. These colored grains represent the gonococci, while others are granulations whose nature is considerably discussed. The gonococci are admirably brought in evidence by this stain. Against the unstained or very slightly stained background of protoplasm, they appear deeply tinted reddish-brown, presenting their typical shape and usually grouped in pairs. They vary in number; sometimes they infiltrate and actually riddle the protoplasm of the cell, while at others they are few, so that only two, four, or six gonococci will be found in each cell. They always occupy the protoplasm, and have never been distinctly seen in the interior of the nucleus. Besides the stained gonococci there were others that remained unstained, or were only tinted yellow. These unstained forms

are especially frequent in those cells in which the organism is very numerous. These gonococci which resist the staining action have never appeared very abundant. It is quite possible that they may have been confounded with certain granulations of the leucocytes, and especially with eosinophile granulations. Eosinophile leucocytes are constantly present in the pus of gonorrhea. They are more or less abundant, according to the time of the disease, its extension and localization. The granulations are sometimes very fine, while at other times they are few in number and of large size. Under ordinary conditions of experimentation these granulations do not stain with neutralroth or only become colored a very little yellow. The extracellular gonococci and other organisms which are frequently encountered in urethral pus associated with the gonococcus, remain unstained. At any rate a few of them (about 1 per cent) are weakly stained red. The gonococci are more or less abundant according to the nature of the gonorrhea. The gonococci placed in evidence by neutralroth are always in exact proportions with those which are stained in dry pus by the ordinary methods.

If one attentively examines a certain number of cells containing this organism, one will always see, if not in every one, at least in many of them, ameboid movements develop. These are always slow. It appears that the leucocytes containing the organism always present, in a most evident way, signs of a lowered vitality. In these cells very distinct movements are observed, the granulations become displaced, go away from or approach each other, but it would be timorous to attribute the production of these movements to the gonococcus itself. The organism, under these conditions, has more especially appeared to undergo the movements of the substance of the leucocyte itself in which it is enclosed, and it will be found to become displaced in the direction of the prolongations of the cell.

After a certain time, which probably varies in direct relation to the vitality of the elements of the given specimen of pus, the leucocytes present the phenomena that have already been described as forerunners of cell death, their activity become lessened and the movements of translations become very slow. At this time Brownien movements become manifest in many leucocytes, while the gonococci present manifest movements of oscillation. Besides the nuclei of certain cells and the intracellular gonococci, certain granulations in the protoplasm fix the stain. In the pus of acute gonorrhea, with a profuse greenish discharge, the leucocytes contain quite a number of granulations. These are more scarce in pus from chronic gonorrhea. The latter appears to stain more slowly than the gonococci and is always less intense, varying from a yellow to a light brown. Rarely these granulations stain a brick red, and under these circumstances are easily distinguished from the gonococcus. From four to six hours after mounting the preparation the proportion of leucocytes possessing stained nuclei will have been increased. After twenty-four hours, however, all trace of the stain has disappeared. The question arises if this method has a practical side. The author believes it has, on account of the ease with which the gonococci can be demonstrated. The method of examination in colored serum avoids many of the manipulations required for staining the dried pus. The hanging-drop is not absolutely necessary and the simple slide will ordinarily be

sufficient. The drop of serum is covered with a cover glass which is held in place by paraffin. A preparation such as this would not serve to study all the phenomena described, but it is certainly a simple, elegant and rapid means of detecting the presence of the gonococcus.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF
HUGO EHRENFEST, M. D.

EPILEPSY AND THE STATUS EPILEPTICUS IN CONNECTION WITH PREGNANCY AND LABOR.—Robert Jardine (*Jour. of Obstetr. and Gyn. Brit. Emp.*, Vol. XII., No. 1).—In his recently issued book on epilepsy, Dr. W. A. Turner gives his experience with the influence of pregnancy, the puerperium and lactation in forty-one epileptic women with a history of sixty-one pregnancies. He tabulates the results in the following manner: Quickening induced a relapse in 7 cases, pregnancy was the original cause in 2, induced a relapse in 14, was temporarily beneficial in 6 and made no difference in 1 case. Labor was the original cause in 5, induced a relapse in 17 cases, while lactation was the original cause in 3 and caused a relapse in 6 cases. In discussing these observations Turner rightly emphasizes the obstetric importance of those instances in which a relapse was caused by confinement. There were two, in which a remission of 12 and 18 months respectively, was broken by the eclamptic seizures of the puerperium. The incidence of serial epilepsy, at or immediately succeeding parturition, is, therefore, a common feature in epileptic women, and raises the question as to the diagnosis of certain forms of puerperal eclampsia. A history of pre-existing attacks would determine the diagnosis of epilepsy; while the existence of a neuropathic family history, or the presence of stigmata of degeneration would point to eclamptic attacks as being of epileptic nature. The presence of albuminuria does not of necessity form the main element in the differential diagnosis, as albumen has been found in the post-paroxysmal urine of epileptics, although it is not a common occurrence. Turner concludes: "It is, therefore, clear, that many cases of puerperal eclampsia are really examples of serial epilepsy, or the status epilepticus, induced during the puerperium in predisposed and neuropathic persons."

To this last statement Jardine, while agreeing in the main with Turner, takes exception. He says: "The two conditions resemble each other so closely that it is difficult to distinguish between them, but there are so few cases of eclampsia, which subsequently have fits, even in connection with pregnancy, that I think we are justified in concluding, that a true case of eclampsia is not one of epilepsy."

A few very interesting cases are detailed. Case 1. A patient, III para, was unconscious when brought into the maternity. Within five hours she had twenty-one convulsions. After forced delivery she remained free from seizures for eight hours. Then fourteen fits in two hours. For the next two days seizures would appear at times up to fifteen within an hour. On the third day the attacks became more

frequent, thirty between 9 and 10 A. M. Between 1 and 2 of the same afternoon she had thirty-two. Later in the afternoon she began to sink and finally died at 7 P. M. The number of distinct fits recorded was 774. For the first two days albumen could not be detected in the urine, later there was never more than a faint trace. At first the patient was looked upon as an eclamptic, but later the writer concluded that he was dealing with a case of status epilepticus. Post mortem examination confirmed this diagnosis.

Case 2. Patient 34 years old, II para. Previous to her first pregnancy no fits. Suddenly in about third or fourth month fits had commenced to occur, at times fifty within 24 hours. Since this second pregnancy she has had attacks of *petit mal* every few weeks. Less frequent of late. Within the last few days before admission to hospital there were from four to eight fits a day. She was pregnant seven and a half months. No indication of labor. Conscious. A few days later vaginal Caesarian section was performed. On the day after delivery forty-two fits; the total number of attacks recorded in this case was 102. Patient recovered.

Case 3. Patient was 21 years old, III para. Had convulsions when 12 years old, none since. When six months pregnant (first pregnancy) convulsions began. As pregnancy advanced they became more frequent, two or three a week. Just before labor fits very frequent, two a week during puerperium. During second pregnancy she had about three fits a week. Between second and the present third pregnancy she had about three attacks a week. At the time of admission to hospital the patient was about seven months pregnant. Fits had become more frequent, four on day of admission. Urine contained a trace of albumen. Two days later premature expulsion of fetus. No fits during labor, only one slight one during puerperium.

Case 4. Convulsions had begun in earliest childhood. Patient was married seven years, and since marriage the attacks have never been convulsive, but consisted of loss of consciousness and strange actions. She is pregnant for the fifth time. During pregnancy her attacks always have been less frequent than at other times. The patient had no attacks while in the hospital.

THE NECESSITY OF REMOVING THE APPENDIX DURING EVERY GYNECOLOGIC LAPAROTOMY.—Pankow (*Muenchn. Med. Wochensch.*, 1907, No. 30).—In this article the author makes a strong appeal for the removal of the vermiform process, whenever the abdomen is opened for a gynecologic operation. Incidentally he attempts to prove that for this reason alone the abdominal route must be given preference over vaginal coeliotomy. From statistics, largely supplied by American surgeons, it has been estimated that in about 10 per cent of all women, in whom a laparotomy is performed for some gynecologic disease, the appendix is found in a diseased condition. In carefully examining 147 cases Pankow was able to detect microscopic evidence of an inflammatory process in the appendix in eighty-two instances, and thus he feels justified in concluding that the proportion of concomitant appendicular trouble is much higher and must be placed at about 60 per cent.

PEDIAICS.

IN CHARGE OF
ALFRED FRIEDLANDER, M. D.

PNEUMOCOCCUS-PERITONITIS IN CHILDREN.—KOOS (*Arch. f. Kinderheilk.*, Vol. No. 46, page No. 228).—Two forms of pneumococcus-peritonitis are recognized in childhood, an encapsulated and a generalized purulent peritonitis. The disease always has an acute onset with severe abdominal pain, high fever and vomiting. The pain is usually diffuse. In some cases an additional symptom consists of numerous watery, odorless stools. Herpes-labialis is found in some cases. In the course of the encapsulated form, the acute symptoms ordinarily begin to disappear after 3 to 7 days. In the second stage it is then possible to determine the presence of fluid in the abdomen. A differential point between this form of peritonitis and the tubercular form, is that fluid can be made out very much earlier in the pneumococcus form. Spontaneous rupture occurs in many of these cases, particularly in the encapsulated form, the pus escaping in most cases through the umbilicus, though it may escape through the vagina. If there is no spontaneous rupture and no operative interference there follows, from the retention of the pus, the picture of a severe septic infection. The differential diagnosis between the generalized form and appendicitis is often not to be made. With reference to the etiology, it is to be noted that the infection may be secondary or primary. Secondary infection occurs as a result of primary pneumococcus infection of the lungs, bronchial tubes, pleura, middle ear, testis, etc. Primary infection probably always occurs through the medium of the intestinal tract, though it is possible that in female children, infection may also occur through the genitalia. Indeed, it is noteworthy that of 72 reported cases, 58 occurred in girls. The prognosis of the encapsulated form is not bad if the diagnosis be made and early operation be had. Of 69 reported cases, 51 were of the encapsulated variety. Of these, 4 died, a mortality of only 8 per cent. Of 18 cases of the diffuse form, 14 died, a mortality of 77 per cent. Treatment in both cases is purely surgical, consisting in the evacuation of the pus and drainage, though it is noteworthy that if the operation can be postponed until the second week, the outlook for recovery appears to be much better. The indication for the operation is therefore to be made dependent upon the presence of the fluid exudate.

THE ALBUMINURA OF THE NEWLY-BORN.—Gundobin (*Arch. of Kinderheilk.*, 46, page 267) finds that the presence of albumin in the urine of the newly-born can under no circumstances be considered a normal phenomena. Inasmuch as the investigators have in most cases found only traces of albumin, which disappeared very early, we ought in reality not speak of albuminuria of the newly-born. To explain the appearance of this albumin, it will not suffice to study the question in relation to the nutrition of the child and nutritional disturbances. It is also necessary

to study the diseases of the fetus, concerning which, we have as yet very hazy notions.

CONCERNING ALIMENTARY INTOXICATION.—Finkelstein (Berlin) has been publishing a series of articles on this subject. In the third instalment of his monograph (*Jahrbuch f. Kinderheilk.*, July, 1907), he says that four stages of this condition may be recognized. In the first stage, which he calls the stage of disturbed equilibrium, the function of nutrition is disturbed to such an extent that the structure of the body and the degree and kind of growth is below normal. In this stage, however, with a properly regulated diet, the child may apparently be practically normal. Even if the feeding be forced there will be no great increase in weight. The second stage Finkelstein calls the dyspeptic stage. In this stage the disturbance is so great that the child only remains free from pathologic symptoms if the amount of food is kept just below the normal limits. If this amount of food be increased there will follow immediately abnormal stools and fever. The third stage is the stage of decomposition. The tolerance for food, at first fatty food and later sugar-containing food, is now greatly diminished. If the food be forced, there is abrupt loss of weight, with oscillation in the temperature curve, frequent subnormal temperature, irregular respiration, cardiac weakness and slowing of the pulse. The fourth stage is represented by the classical picture of auto-intoxication.

NEUROLOGY.

IN CHARGE OF
SIDNEY I. SCHWAB, M. D.

OBSERVATIONS ON THE TREATMENT OF GENERAL PARALYSIS AND TABES DORSALIS BY VACCINES AND ANTISERA.—Robertson—M'Rae (Rev. *Neurology and Psychiatry*, September, 1907).—The basis of the treatment instituted in the diseases mentioned in the title of this paper, is as follows: The authors had definitely ascertained that a threading diphtheroid bacillus isolated from the brain and bronchus of a rapidly progressing case of general paralysis, was capable of producing a subacute disease in rats in which the symptoms were distinctly comparable to those of general paralysis; that on post mortem examination of the animals the brain showed the characteristic changes of general paralysis and that there was also the characteristic invasion of the thread bacillus. The conclusion seemed to be justified therefore that of all the forms of bacteria found in general paralysis there was one form which seemed to be capable of producing the disease.

Method of Vaccination. The material employed was a suspension of a weighed quantity (10.30 mgr.) of the bacilli in 2.5 c.c. of sterile saline solution heated to 60° C. for fifteen minutes. The emulsion was given subcutaneously. Local effects varied from the merest induration at the site of the puncture to erythema and edema of the subcutaneous tissues. The immediate general effects were the production of brief pyrexia, flushing of the face, headache and drowsiness, while increase of tremors,

ataxia and a return of lightning pain occurred in some cases. Mentally there were remarkable changes in not a few of the cases. Nine cases were treated in this way. The results of these observations would seem to show that repeated vaccinations might prove a useful method of treatment in tabes and general paralysis. That the method was not pursued further was owing to the fact that the authors were merely waiting until they could prepare a suitable antiserum, and the vaccines were simply used for experimental purposes. Sheep were selected as being the most convenient animal for the preparation of the antiserum. Twelve sheep were immunized to various strains the virulent diphtheroid bacillus. The serum is administered by hypodermic injection, by the mouth, through the nose and, in one case, by the rectum. The only local effect is a little induration. Serum urticaria occurred in nearly all the cases. When the serum was given by the mouth local effects were manifested by the development of nausea, vomiting and diarrhea in some cases, and the occurrence of a feeling of hunger in nearly all cases. General effects were chiefly drowsiness, diaphoresis and malaise. The therapeutic effects on the mental and motor symptoms is shown by the account of a number of cases so treated. Thirty-four cases of general paralysis and two cases of tabes have been subjected to the antiserum. All of these have yielded positive results as regards temperature and other phenomena. Twelve of these cases have been under the personal observation of the author for a period of three months and they have shown remarkable degrees of improvement. An interesting part of this study has been the control cases. Various other mental diseases were subjected to the antisera and none of them showed the characteristic reaction to the specific sera. In conclusion there is the following: 1. That the antisera which we have been working produce reactions which are diagnostic of general paralysis, or tabes dorsalis. They are probably due to the liberation of endotoxins. 2. Cases of these diseases treated with the sera, in most instances undergo improvement. 3. A polyvalent anti-bacterial serum is likely to be more efficacious than either the mono or bivalent serum we have hitherto used. 4. One of the chief obstacles in the way of obtaining a very potent serum has been the loss of virulence in the strains of the organisms used. 5. There are grounds for believing that an antitoxin serum would be of use especially for the immediate treatment of congestive seizures. 6. In view of the presence of dissolving bacilli in the brain of the general paralytic, where in all probability they produce extremely virulent endotoxins, another aim should be the production of a serum containing chiefly an anti-endotoxin.

OPHTHALMOLOGY.

IN CHARGE OF
JOHN GREEN, JR., M. D.

RUPTURE OF DESCMET'S MEMBRANE FROM HIGH INTRAOCULAR PRESSURE.—Alt (*Am. Jour. Ophthalm.*, May, 1907).—Fissures in Descmet's membrane have been found especially in buphthalmus, high grade myopia and glioma retinae. Some observers appear to have encountered these

fissures frequently and others not at all. Alt believes that high pressure alone cannot be held responsible, but that other factors, such as the softer tissue of the child (in examples occurring in glioma) and disturbance in the nutrition of the corneal tissue, are to be held accountable.

Recently in a case of glioma, Alt observed two double contoured gray lines running in the deeper layers of the cornea concentrically with the corneal periphery, the one two mm. from the temporal, the other three mm. from the nasal margin. Sections showed the ruptured ends of Descemet's membrane rolled up spirally towards the cornea or projected straight into the anterior chamber. The close packing of the overlying corneal lamellæ and their straightened appearance suggested that at the time the ruptures occurred the cornea was also torn to some extent. That the ruptures were not very recent was proved by the fact that the ruptured ends were covered with endothelium, and that a new Descemet's membrane had formed in the gap between the ends, which were also covered by a layer of endothelium. Opposite these ruptures Bowman's layer was wanting for some distance, the corneal tissue being simply covered with epithelium.

SECONDARY CATARACT.—Lubowski (*Klin. Monatsbl. f. Augenh.*, April, 1907).—The author recommends a method of discission which he has employed for the last two years. At the outer side of the cornea he makes a puncture with a small keratome, then introduces a sharp cystitome or Stilling's harpoon, sinks its point into the membrane at the opposite side of the pupil, draws it back to the aperture of entrance, thus making a horizontal cut which usually gapes widely. After it has been ascertained that no vitreous threads are caught in the wound, a dusting of iodoform and bandage complete the operation. On the following day the eye will be found quiet and the wound firmly closed; the dressing may be dispensed with and the visual acuity ascertained. It is not necessary to take the patient into the hospital. The method is applicable not only to thin but to fairly stout membranes; it is not suitable for tough, adherent complicated cases.

A CASE OF PERFORATION OF THE CARUNCLE FROM BLENNORHOEA OF THE LACHRYMAL SAC.—Boley (*Woch. f. Ther. u. Hyg. des Auges.*, No. 30, 1907).—A young girl suffering from slight ozena developed a swelling of the lids and bulbar and palpebral conjunctiva of the left eye. The plica and caruncle were so large and red that identification of their parts was difficult. By pressure over the lachrymal sac thick yellow pus could be driven from the puncta and similar pus exuded from the caruncle. In the caruncle was a crater-like depression which communicated with the lachrymal sac as evidenced by fluid injected into the sac escaping from this opening. Irrigation with 10 per cent protargol solution, gentle massage and boric fomentations resulted in a complete cure.

Boley considers that the cause of the trouble must have been an infection of the lachrymal sac from the nose by some virulent micro-organism, and that the acuity of the inflammation was such that the duct and canal-

iculi were insufficient channels of exit for the pus, which penetrated first the wall of the sac and then the caruncle.

NOTE ON A LITTLE KNOWN FORM OF COMPLICATED CATARACT.—Purtscher (*Arch. d'Ophthalm.*, April, 1907).—The form of cataract to which Purtscher alludes is not generally noticed in the literature on the subject of diseases of the lens. Four cases are detailed—two brothers, their sister and a man who was no relation. In all the cases the cataracts appeared about the age of thirty; they were either cortical or more commonly total; the sclerotic was thin or of a porcelain bluish white, the anterior chamber was very deep; the iris was of a dirty grey brown colour and showed none of the usual trabecular structure, though sometimes concentric folds were visible; a very irregular ectropion of the uvea was usually present; the pupils were sometimes contracted, generally unequal, acting badly to light, to accommodation and to atropine. Iridodonesis was marked in most of the eyes and the vitreous was often so fluid as to escape with aqueous when the anterior chamber was opened. In all the cases there was a strong predisposition of the eyes to glaucoma, cyclitis and detachment of the retina on any operative interference.

If operative intervention is absolutely necessary probably a preparatory iridectomy, followed by extraction of the lens by means of a spoon or hook, offers the best chance of a successful result.

OTOLOGY AND LARYNGOLOGY.

IN CHARGE OF
W. E. SAUER, M. D.

TUBERCULAR INFECTIONS OF THE FAUCIAL TONSILS.—Robertson (*Laryngoscope*, August, 1907).—The author found that 8 per cent of patients presenting for nose and throat symptoms, exhibited primary tuberculosis of the faucial tonsil; also that a large number of these patients exhibited lung tuberculosis as a direct infection from the gland through the lymphatic chains.

If we inoculate the tonsil with a strong tubercular culture, we are able to produce this infection of the gland, and we are aware that it is harder for an inoculation to take place on the surface of the gland than in the crypt, because of the thickness of the covering of the tonsil by squamous epithelium. In caseous tonsils we have crypts filled with cheesy material composed of epithelial cells and numerous varieties of bacteria, especially those crypts which have some obstruction to the opening, and these we find in the upper part of the gland, or in the supra-tonsillar fossa. If the opening of the crypt is occluded or pressed upon, the material is pushed deeper into the crypts; here this material lies and decomposes, forming an autoinfection which occurs most frequently in the depth of the crypt, and the lymph bodies then take up the tubercular infection. In examining hundreds of tonsil specimens, the author found that solitary lymph bodies broke down with epithelioid degeneration, and showed the presence of tubercular giant cells. The infection is taken up readily by the lymphatic glands, as was shown by

tubercular infection of the cervical lymphatics before the infection in the tonsil had affected more than two or three lymph bodies surrounding a crypt, and when once the cervical chain is involved, the infection is readily carried to the lungs.

EDUCATIONAL TREATMENT OF THE DEAF IN ALL THE STAGES FROM IMPAIRED HEARING TO THE TOTALLY DEAF.—Love (*Jour. of Laryngology*, September, 1907).—After a thorough study of the subject in the leading schools of the world, the author has come to the conclusion that the present system of educational treatment of the deaf, while beneficial to the majority, works a great injustice to a large percentage of these unfortunates.

He believes that before deaf-mute children are placed in an institution, they should be thoroughly examined clinically, in order to determine, first, when did the child become deaf, and second, how much hearing he has left. You cannot restore the child's hearing, but you can save what is left and build speech thereon. If there be no hearing at all, but some unforgotten speech, you can save that and build more speech on it. In all large institutions you will find that from 5 to 10 per cent of these children lost their hearing between the ages of 3 and 10, as the result of scarlet fever, measles, etc., and they have a good deal of speech left, but are totally deaf. These are the semi-mute. About 15 to 20 per cent of the children are semi-deaf, who after a little experience, distinguish and repeat vowels, consonants, or words which are spoken into the ears. These children, the semi-mute and the semi-deaf, the author believes should be taught orally. In their education, no manual alphabet should be used, neither should any systematized sign-language be employed; they will lose what speech they have and become quite dumb. The oral teaching of the semi-mute and the semi-deaf has been tried in Nyborg, Vienna and Munich, and it was found that they make much more rapid progress than when associated with the totally deaf and dumb.

LARGE TUMOR OF THE LARYNGOPHARYNX, REMOVED BY SUBHYOID PHARYNGOTOMY.—Chappell (*Med. Rec.*, July 13, 1907).—The author reports an interesting case of a large tumor that filled nearly the entire laryngopharynx, removed by a subhyoid pharyngotomy. The patient, whose age was 51, began having a short dry cough at the age of 18 which continued up to the age of 45, when her breathing became quite labored, being worse at night; and about two years ago she began to choke on particles of food, vomited a meal occasionally, and could not sleep on account of embarrassed respiration. A laryngoscopic examination revealed a large grayish-blue mass completely filling the laryngopharynx; the pedicle was close to the left ary-epiglottic fold, and seemed to consist of large vessels. A cold snare could not be gotten around the mass on account of adhesions, so a subhyoid pharyngotomy was resorted to and the tumor removed. The tumor was smooth, irregular in shape, weighed 20 grams, had a circumference of $4\frac{1}{2}$ inches, and consisted of fibrous tissue. Patient made a complete recovery and was restored to health. The author states that in looking over the literature, some eleven tumors of a similar nature have been reported.

CORRESPONDENCE.

LONDON LETTER.

(FROM OUR OWN CORRESPONDENT.)

The third volume of the minutes of evidence, just issued by the Royal Commission on Vivisection, contains some interesting reading, interesting as showing on what grounds some of the opponents to experimental research justify their position. One of the most notorious of these, the Hon. Stephen Coleridge, managed in the course of his three days' examination, to drag into his evidence opinions from Shakespeare and Dr. Johnson. One may well exclaim, "*Que diable allaient—ils faire dans cette jalese?*" Mr. Coleridge, however, is a past master in piecing together fragments and presenting them as a complete quotation. After a vivid flight of imagination, purporting to be an exact description of what goes on in laboratories and to be based upon the evidence extorted in the libel case in which he was cast in heavy damages, Mr. Coleridge proceeded to favor the commissioners with his views on the ethics of the question. Although vivisection is wrong because it inflicts pain, he does not consider it immoral to make use of knowledge which has been obtained as the result of painful experiments, but no more are to be allowed. By way of analogy he explained that, though he utterly condemns on every ground the slave trade, he would not deem it either immoral or illegal to enjoy the results of a fortune accumulated in that trade by his great-grandfather—if such had been the case. He then proceeded to "measure other people's corn by his own bushel." He is an unrepentant lawbreaker in the matter of speed in his motor car, and when caught *flagrante delictu*, promptly denies that he has been exceeding the speed limit. In his opinion vivisectors regard the Vivisection Act with the same contempt that he himself has for the Motor Car Act.

No explanation was vouchsafed as to what particular benefit accrues to research workers by evasion of the law, or why they should prefer, as alleged, to carry out experiments, demanding extreme care and nicety of touch, on the writhing bodies of unanesthetized animals instead of making them on those under the peaceful influence of a general anesthetic. The Royal Commission bids fair to do a great deal of good, for the anti-vivisectionists are being given plenty of rope and the usual consequence will follow. They seem to have some prevision of their fate as they have, by dint of disparaging the board, done their best to discount in advance the ultimate findings of the Commission.

On the 1st October appeared the new medical journal devoted to clinical medicine, under the title of the *Quarterly Journal of Medicine*, with an editorial staff composed of Professor Osler, Dr. Rose Bradford, Dr. Robert Hutchison, Dr. A. E. Garrod, Dr. H. D. Rolleston and Dr. Hale White. In the papers published the subjects are to be dealt with "more comprehensively and in greater detail than has hitherto been possible," so that the style will be that of the *Deutsches Archiv für klinisches Medizin*. Whether there is room for such a publication re-

mains to be proved, but the names of the editors are amply sufficient to ensure that the contents will be the highest class. Osler, Hutchison, Byrom Bramwell and G. A. Gibson are among the contributors to the first number.

Allusion was made in one or two of the introductory lectures on the 1st October to the long-desired consummation of a real University of London—real, that is, in its equipment for teaching. Eventually, something of the nature of a cerebellum will be evolved, which will co-ordinate the vigorous exhortations made in the separate medical schools in London to cope with the necessary instruction in anatomy, physiology and other sciences auxiliary to medicine, such as chemistry, biology and natural philosophy. Already some of the smaller schools are collaborating for these purposes, but what is wanted is the one great institution with the honor, the dignity and the *cachet* of an university status, and invested with endowments on a sufficiently liberal scale to pay to the professors and lecturers salaries which are properly commensurate with their high position, and at the same time to admit of the establishment of research fellowships. The achievement of this great purpose is beset with difficulties, but many of these would vanish if a few of those well able to afford the luxury would resolve to have their names enshrined in the University records and be commemorated at the festivals as "pious founders and benefactors." Science for the sake of science could then be followed in every branch, freed from the worries and anxieties of *res augustae domus*, which, at present, represents about all there is to be gained by her devotees. It certainly does not conduce to progress,

"For there never was yet philosopher

That could endure the toothache patiently."

Sir James Crichton-Browne has managed to set another volcano in eruption by his shrewd and eminently practical remarks on food, declaring his adhesion to the sirloin and the mutton chop. The food-faddists, as may be imagined, are extremely wroth and have emitted torrents of fiery denunciation. In the constant rise and fall of fads, it is very satisfactory to note that the uric acid fetish is beginning to lose its hold on its innumerable worshipers, including many in the ranks of the medical profession. It still holds ground, for it offers such a charmingly simple explanation of many things. Gull used frequently to remark, "Savages and fools explain; wise men investigate." A little while back, Lutt inveighed against the shameful manner in which "a harmless by-product in metabolism had been exploited as a dangerous poison." In his latest work on gout he saps the very foundations of the uric acid position, leaving it quite defenseless.

The increased rate of cases of insanity is a topic which gives rise to much headshaking and gloomy foreboding. The interest in the subject is perennial, but it is always subject to an exacerbation on the appearance of the annual report of the Lunacy Commissioners. On the face of it the numbers certainly look alarming, for the increase in certified lunatics during the last fifty years has been three times as great as the increase in population. The commissioners, however, insist that three factors are sufficient to account for the whole of the increase. In the first place, certification has become more and more strict, so that a very much larger proportion of those formerly classed as feeble-minded are now certified

for asylum treatment. The larger number of rate-supported institutions is necessary to satisfy the demands due to this increase, which almost entirely affects the pauper class. Another factor is the greater accumulation of patients in asylums, partly due to the foregoing and partly also to a third factor, the decrease in the number of cases discharged as cured. The report therefore gives no support to the depressing and pessimistic prognostications uttered in various quarters.

October 10th.

PARIS LETTER.

(FROM OUR OWN CORRESPONDENT.)

If there is one question which on account of political, historic-economical, and hygienic reasons is not regarded in France with indifference, it is the one involving the use or non-use of wine. Formerly sung in all keys by the poets and universally praised by the gourmets, French wine has recently been the object of the harshest sort of criticism, the effects of which almost resulted in a crisis in the national prosperity. For this crisis the physicians have been held partly responsible, and the time seems opportune to inquire into the reasons and the injustice of this accusation.

The prohibition of wine by a large number of physicians is a fact. But it is well to remember that the majority of physicians who do not prescribe it systematically only combat its use in healthy subjects, and place their interdiction on its use in certain determined pathological cases. Without a doubt the use of wine by a person afflicted with gastritis or a gastric ulcer, aggravates the disease. Moreover in certain particular cases medical prohibition can find justification in the increase of fraudulent wines. To such an extent are these frauds perpetrated that it is almost impossible to procure a wine that is made of the pure grape juice, and this is the true reason why a number of physicians have ordered the discontinuance of wine in families. Snobbishness has done the rest.

Truth to tell, the physicians are really the best apologists for the use of wine on condition that it be taken moderately, and by persons in good physical condition. Instead of accusing physicians of being the cause of the underselling of wines, one is justified in saying that the interdiction placed on alcohol and liquors has been the determining factor in the reaction which will bring about the return of the popularity of the vine to the detriment of laboratory mixtures. If we were to mention the number of works which have come from the pens of French writers and which are favorable criticisms on the consumption of non-adulterated wines, the number of pages in this Journal would be inadequate. Furthermore it would be well to mention what French physicians have written extensively on the alimentary and therapeutic value of wine.

"Since nature does not supply us with a ferment," said J. J. Rousseau, "it is wrong to believe that the usage of artificial drinks is necessary to the life of her creatures." This is a specious argument. Professor Arnozan, of Bordeaux, put the matter succinctly when he said, "One

should do without any substance that is useless and harmful." Moreover wine is not a simple dilution of alcohol but a complex entity of which each component part has its utility. Therefore no modification of its proportions should be tolerated. Tannin, tartrate of iron and phosphate of lime, in particular, should never be regarded as the inert components of wine. Natural wine is an aliment of reparative, caloric, stimulating, astringent, diuretic and digestive qualities. Mixed with water the dose amounting to 50 or 60 centilitres per day is of the greatest service in the alimentation of healthy subjects.

A number of physicians are of the opinion that the utility of wine is not limited to the healthy and that the sick are also benefited to an appreciable extent. While in cases of acute gastritis or in affections of the stomach where the mucous membrane is hyperesthetic, the administering of wine is contraindicated, it is now firmly believed that this contraindication does not apply to all dyspepsias. On the contrary, wine has a favorable action in certain cases of salivary dyspepsia; it stimulates the hydrochloric acid and therefore must be considered a eupeptic agent. The tuberculous, the convalescents, the diabetics should drink wine, particularly a Bordeaux claret. It has been noted that wine readily kills the pathogenic microbes of cholera. The same antiseptic action occurs with the bacillus of typhoid fever. Red wines destroy Eberth's bacillus in two hours when the wines are pure; in four hours when they are mixed with an equal amount of water. It is said that the majority of French physicians are convinced that wine is a useful drink for adults and for children after their second year. If it is true that they prescribe wine as reported, it is done after due deliberation and in certain determined pathological cases. The opponents to the use of wine base their so-called hostility on the desire to establish confusion in the minds of the masses in connection with alcoholic drinks, liquors and wine. The wine problem and alcoholism are two distinct and unrelated questions. It should not be forgotten that when we consider the wine problem we mean only pure wine and not the adulterated product. It is the abuse of wine that is deplored, not its moderate usage; it is against the abuse and also against certain frauds that the medical men array themselves so strongly. But above all, alcoholism and absinthism are attacked by them; and one of the best remedies proposed to prevent the increase of alcoholism is the consumption of natural wine, such as is produced in the vineyards of France.

To hold the medical profession responsible for the economic crisis which has lately taken place as a result of the decreased sale of wine would be wrong; other causes much more plausible are at the root of it. On the contrary, the much maligned wine problem is greatly indebted to the profession for its rehabilitation. If anything the profession views the national product—wine—with complaisance despite the fact that the producers themselves have made the accusation that many physicians were instrumental in bringing about the crisis relating to vine culture.

October 16th.

OBITER DICTA FROM FOREIGN JOURNALS.

REGRETTABLE EXAGGERATIONS: TEETOTALERS AND XENOPHILISTS.

Dr. J. Noir, in *Le Progres Medical*, has the following to say on this vital subject: Recently, alcohol as a poison and alcoholism as a social scourge have been topics for much vituperative controversy. The ravages induced by this poison, the increasing number of mental diseases and the reports that appear in the lay press on the subject of criminality, have inflamed the popular imagination to so great an extent that superficial thinkers and many continent persons are waging a merciless war against its use. The crusade has now been on for some time and the fruits of the many discussions are within reach of anyone who is interested in the matter. Temperance societies that were formed or are being formed throughout the world are much more aggressive than formerly; they federate, organize congresses, distribute circulars in schools, force their way into barracks, and even preach their tenets in workshops. Catholics, Protestants, Free-thinkers, Conservatives, Liberals, Radicals and Socialists, are as one when discussing the use of alcohol.

Unfortunately for the benefits which might have followed this movement of reform, the enthusiasm of the workers has resulted in a veritable religion that has all the drawbacks of a belief when its dogmas convert the faithful into the worst sort of fanatics. And these fanatics, masquerading in the guise of teetotalers, are doing much to bring the fight against alcohol in France into disrepute.

At the last International Anti-Alcoholic Congress, at Stockholm, the fanaticism of the narrow-minded abstainers was graphically illustrated. The virulence of their arguments had enough of the comic to have caused much laughter had a less serious subject been under discussion. At this Congress, Prof. Landouzy was jeered and repeatedly interrupted because he had the audacity to affirm that alcohol, in small quantities, was a stimulating aliment, a view he felt himself justified in taking because, physiologically, its worth had been established as part of the normal diet. The abstainers rose *en masse* and denounced him as an enemy of humanity, an instigator of drunkenness, a supporter of immorality! Strange, indeed, that he was not lynched by his opponents of both sexes, for they were in a murderous frame of mind, evidences

of which had been given, the night before, in a conference which bore the title, "Alcohol and the Sexual Question."

To combat Prof. Landouzy's revolutionary remarks, a French delegate aroused the greatest enthusiasm by saying "that civilization is a product of the North and that the Germanic races, due to their abstinence from the use of wine, are the chief agents in the progress of humanity. Civilization had its cradle in the northern fogs and the people living on the Mediterranean today are showing unmistakable signs of degeneration, a fact which can be explained only on the ground that they are wine drinkers." If this is so, let us refrain from speaking again of the marvelous civilization of the Chaldeans, Egyptians, Assyrians, Greeks and the Latins; for the tales we have heard about these races must be untrue, since they were always addicted to wine.

Prof. Taar Laitinen, of Helsingfors, by the aid of many hecatombs of guinea pigs and rabbits, proved that the regular use of alcohol, even in small doses, was a cause of degeneration, from which it was easy to conclude that moderate wine drinkers were responsible for the degenerates and idiots with which civilization is cursed.

On the other hand, wine itself has been elevated to the false position of a god, whose followers are fanatics of the same sort as the Anti-Alcoholic enthusiasts. And in his name, let us add, the faithful are guilty of many stupidities.

Although there is no denying the good qualities of champagne, of Burgundy, and of Bordeaux, to state, as many purblind enthusiasts of wine have done, that the juice of the grape has many therapeutic qualities, is, to say the least, an unfortunate exaggeration. In spite of the learned essay that a member of the profession, who is both physician and senator, has published in one of our leading newspapers, we cannot but view with regret his advocacy of the use of wine by dyspeptics and children of tender years. And the statements that wine, even when diluted, is a strong microbicide, that the bacilli of typhoid fever and of tuberculosis are readily destroyed by it, leave us in a state of scepticism.

Teetotalers, enemies of the wine, and knights-errant of the juice of the grape, will you never see the discredit that your exaggerations are casting on equally good and just reasons for the use and non-use of wine! Many sensible persons who are mildly moved by the discussions, but who are partisans in the anti-alcoholic war, or defenders of wine, and are hopeful that the outcome will be beneficial to all, must, when they hear the recriminations which are the best part of the arguments, exclaim with Paladin: "O God, deliver me from my friends, I will take care of my enemies!" (Translated for the INTERSTATE MEDICAL JOURNAL).

INTERSTATE MEDICAL JOURNAL.

VOL. XIV.

DECEMBER, 1907.

No. 12

EDITORIAL.

THE GRIP OF THE SPECIALIST.

A new interpretation of the relation of the specialist to the general practitioner has recently been printed in the "London Nation" and to say it is painted in lurid tones is to put the matter mildly. Of course, it is always well to see ourselves as others see us, especially when the instigator of a trenchant arraignment happens to be a layman; and surely the maker of the lines in the "Nation" belongs to that large class of inspired outsiders who see obliquely the inner workings of the wheels of medical practice, otherwise he would not impute to us the complete harmony without which his theory of our nefarious actions would not have even one foot to stand upon.

To get at the writer's theory, which is not the easiest thing to do, we may say without indulging in much poetical license that it resolves itself into this,—on account of the affinity and sympathy existing between the general practitioner and the specialist, the former is only too willing to turn his patient over to the latter; not because he feels his inability to cope with the disease but because he has so much consideration for his patient, and so high a regard for the specialist's ability to attend the patient, indefinitely, with monetary results that fairly make us gasp, that to withhold from his beloved patient "the grip of the specialist," would be doing the patient and specialist a hurt which the superb behavior of the latter does not merit. And when the specialist swoops down on the patient, the tragedy of the patient's life is soon in full swing; for nothing can stop this modern Frankenstein from driving his iron fangs into the purse of the sick Fortunatus, and by methods which are but hazily explained, destroy the mental equilibrium of the affrighted victim. The proceeding, as explained by our literary antagonist, is really a "chain" system, which is started by the affable general practitioner and greedily taken up by the specialist, without let or hindrance, until the recovery (a doubtful ending) or the sinister termination in death.

Now all this would stand for truth, if the socio-medical conditions obtaining in the profession warranted such direful conclusions. But,

fortunately for mankind, the harmony pictured in the article is not the perfect quality the writer would have us to believe. While the relations between the general practitioner and the specialist are quite amicable, there is enough of the wee bit of bickering between them to destroy the ineffable affability of the former (as described by the writer) and the reciprocal amiability of the latter. Of course this undercurrent of jealousy does not wholly destroy the feeling of brotherhood in the profession; nevertheless it is strong enough to prevent the "chain" system which our critic so greatly deprecates. And thus we see that the despised qualities inherent in our defective make-up often work towards a happy goal for suffering mankind.

The ebullitions of our critic get considerable reenforcement from Maarten Maartens' recent novel "The New Religion;" and here again the general practitioner is suavity personified, and the specialist a vampire in human form. Just why in the "Nation" and "The New Religion", the general practitioner is always portrayed as a man only too willing to yield to the importunities of the avaricious specialist, passes comprehension. The general practitioners we happen to know are comparatively sane, and while they do not grudgingly give up a good "case" to the specialist, their sanity prevents them from self-immolation on the altar. Mr. Maarten Maartens and the writer in the "Nation" have erected for this noble and unselfish act. As for the specialists who have seen fit to swim into our ken, they seem to be quite normal, with the usual desire to live by their profession, and not too rampantly afflicted with avarice or cupidity. But the spirit of the times, as reflected by the writers we have quoted, and by many others who have made plangent noises, is decidedly antagonistic to specialism. They seem to see in it the Juggernaut which will ultimately crush mankind. To convince them that their fixed idea is indicative of mental confusion brought on by indigested readings, would be quite hopeless, for their answer would be that they are the inspired spokesmen of the instinct of the mass of mankind, as regards the uncanny methods of the specialist. Nevertheless we may say to these genuine but small diluted men what Carlyle said of Coleridge when criticising the poet's "Table Talk": "Coleridge mounts scaffolding, pulleys, and tackle, gathers all the tools in the neighborhood with labour, with noise, demonstration, precept, abuse, and sets—three bricks."

A NURSE'S IDEA OF EUTHANASIA.

A novel with a purpose always gives us pause for the "meat" thereof when properly garnered with literary trimmings is usually of the sort that is considered high; and high meat always whets the appetite so

that the reader reads on despite the dreariness of the book merely to get at the *purpose*. "The Fruit of the Tree," by Edith Wharton, has a *purpose*, and though we cannot say it is a new one, it looms up just as large and scintillant as was its wont in its early youth.

"What shall we do with the suffering, those who cannot possibly recover?" is fairly screamed from the first page to the close of the story. The authoress with a lightness that would be commendable in an opera-bouffe but is decidedly out of place in a serious work, makes short shrift of the question, 'by boldly stepping before the lime-light and shouting "Kill them". Belonging to that large class of refined literati who doubt the sincerity and prowess of physicians in such direful circumstances, she not only entrusts her message to a nurse but makes her the perpetrator of the foolish deed. Confidence in certain people cannot be explained by any system of philosophy; therefore, if an authoress prefers to make a pliant nurse the agent of an abnormal act, instead of the less yielding physician, she has a perfect right to do so. And surely, Justine Brent, the nurse, from the time she steps into view until the little tragedy is over, does the authoress's bidding very nicely. In fact, she goes to such lengths that we are quite surprised that even a "book" doctor would stand for her many insolences and audacities. But let us examine the book.

The principal characters are John Amherst, the assistant manager of the mills at Westmore, "no one-sided idealist" but one who "felt keenly the growing complexity of the relation between employer and worker, the seeming hopelessness of permanently harmonizing their claims, the recurring necessity of fresh compromises and adjustments"; Mrs. Westmore, a widow, rich, vain and worldly, with but a faint interest in "compromises and adjustments", and who later becomes Amherst's wife; and Justine Brent, a surgical nurse, who illustrates all the faults of the sort of education which was the cause of the recent closing of the Cambridge (Mass.) School of Nursing. Not to disturb this highly dramatic triangle, but merely to make mention of the insignificant fact, there are also two physicians, Drs. Wyant and Garford, who are put in the book to show the cringing, time-serving, money-loving qualities of the ignoble medical profession as contrasted with the sublime self-sacrifice of the nurses' corps evidenced in the transcendently intellectual Justine Brent. Things jog on as they do in most novels until Mrs. Amherst falls from her horse and sustains an injury to her spine. There is a saying that "All things come to him who waits," and we hasten to inform the reader that the thought-compelling surgical nurse did not wait in vain, for directly she began her duties at Mrs. Amherst's bedside, the obsession to kill her patient quickly engrossed her. Dr. Wyant and Dr. Garford "the great surgeon" seem to our low mentality

to have done all that could be done, but the nurse was decidedly critical of their execrable methods, especially when her patient was restless or gave indications of being in pain. As the authoress says, with the simplicity of language for which she is well-known: "She had often thought with dread of such a contingency. She always sympathized too much with her patients—she knew it was the joint in her armour. Her quick-gushing pity lay too near that professional exterior which she had managed to endure with such a bright glaze of insensibility that some sentimental patients—without much the matter—had been known to call her 'a little hard' ". And one day this great sympathy carries her completely off her feet; and despite "the great surgeon's" favorable prognosis, she "heard an inner voice and its pleading shook her heart. She rose and filled the syringe—and returning with it bent above the bed * * *".

Whatever the logical strength of Mrs. Wharton's advocacy of euthanasia, the crux before us is which one of us—and now we are speaking of the medical profession—is willing to saddle himself with the doing away of a patient. That certain diseases are incurable is patent not only to us but to the public at large; nevertheless, to appoint one or another to execute an act that would mean surcease of agony for the sufferer, would be met, in our present state of education, by a quick rebuff. Moreover, visionary theories should not lodge in any physician's brain; his duties lie in the direction of science, and if today her teachings have not yet reached a perfect fruition, he must abide by them, defective though they be. As to a nurse assuming the responsibility, we question if in real life that sort of doubtful heroine could be found. As yet over-education on the part of nurses is not so frequent that a sermon against this kind of intellectual disfigurement can be preached. Even in the isolated cases where it shows some signs of growth, the mastery of the situation in the sick-room, which rightfully belongs to the attending physician, soon teaches her that her duties are subservient to his behests. Mrs. Louisa Chick in "Dombey and Son" was not a trained nurse, but when she requested her very ill sister-in-law, Mrs. Dombey, "to make an effort", she expressed much better philosophy than all the teachings which characterized the somewhat chimerical movement for the higher education of nurses as illustrated by the now defunct Cambridge School of Nursing.

ESPERANTO AS A UNIVERSAL LANGUAGE FOR PHYSICIANS.

A new Moses has arisen to guide the medical fraternity to the Promised Land of linguistic felicities. Physicians who have attended International

Congresses with due regularity have often remarked the multiplicity of languages spoken, and though the brave spirits among them have stood up to the task of comprehension, their superhuman efforts have often resulted in but a faint conception of the import of a paper. Linguistic intricacies and nuances of a foreign language are not easy of mastery; and even he who imagines his smattering of French, German and Italian will be a help in the understanding of a paper, soon finds that his Anglo-Saxon brain is so sadly muddled by what he hears that he could not fare worse were these languages an unknown quantity before attending the seances in the modern medical Towers of Babel. That small profit can come to those who make pilgrimages to polyglot medical shrines, even when desire for knowledge is in the ascendant, can readily be understood. Now to rid the path of the many stubbles incident to the foreignness of a tongue, so that a quick understanding of new theories may be effected, a new means has been devised by no less an authority than Dr. W. Winslow Hall of England.

The world at large has recently heard much about the good qualities of Esperanto. By good we do not mean anything pertaining to morality, but the ease with which the language may be learned, its simplicity of grammar, its absence of verbal intricacies, its perfect adaptability to all minds, be they large or small. Any language that is characterized by the aforementioned qualities has a right to bid for public favor; and far be it from us to discourage those who have closely followed in its wake, though we must say their frenetic enthusiasm has at times appeared to us, who are still uninitiated, a bit corybantic. But then we are still in the thralls of our modern Lindley Murrays; still unwilling to exchange for accustomed rough fields dotted with mountain-high obstacles, the smooth, smiling plain that has not even a hillock to show.

As we said before, we have known of the high qualities of Esperanto as a speaking language before now, but Dr. Winslow Hall, writing in a recent number of the "Lancet," sees many other possibilities, among them those entrancing, soothing and pleasure-giving qualities which we all crave especially when cudgelling our brains over the why and wherefore of the barbarism of foreign verbs. The following pertinent passage from the article will show to what lengths Dr. Hall's enthusiasm has carried him: "But it would be unfair to close without a word or two on the attractiveness of the study of Esperanto as a hobby for medical men. It is a quiet and clean occupation; it can be pursued in the pauses of one's practice; it is in itself a keen intellectual pleasure; it opens up a wide and curiously varied range of literature; it throws a marvellous light on our English language, on grammar, and on points of style. Withal, proficiency in this language is rapidly attainable; every one

may reasonably count on mastery; and then there comes the strong delight of wielding skilfully this brilliant, supple, clear, and comely mental tool. Further, Esperanto broadens a man's outlook; it can give to the loneliest country doctor correspondents and human interests in every quarter of the globe; it can make him indeed a citizen of the world and a universal brother. More than that, it has realised to such an extent the vague, expectant aspirations of our time that for many a man and woman, even now, it shadows forth the coming world religion."

When we recall the number of books which have been written on subjects pertaining to the desired solution of the language difficulties of the sorely-beset general practitioners, and their attendant failures, we should not withhold our earnest support from any enthusiast of something to alleviate our mental suffering as it stalks big at the bedside of a Greek or Russian patient. A book that was published some time ago, "Dolmetscher am Krankenbette" (The Medical Translator) by Paul Blaschke, 1907, Berlin and Leipzig: W. Rothschild, was hailed by us, before we read it, as the panacea of our linguistic troubles. But our beatific state lost all its supernal qualities directly we read its contents, for the instructions given were of the sort that only a grave German philologist, without any sense of humor, would be guilty of. For instance, the German physician, when ordering a blister for an English speaking patient, is told to say, distinctly: "Apply a Spanish fly behind his ear" and the German sentence "Reinigen Sie mir die Zähne" is rendered as "Clean me my theeths." Again "Machen Sie abwechselnd heisse und kalte Kompressen" is said to have its equivalent in "Mehk bai törns hott änd kohlt kätäplasm". Therefore if Esperanto can hold the cup of joy to our parched lips as they occur when listening to a medical paper in Russian, or a Bulgarian patient trying to make clear to our befogged intelligence the gravity of his suffering, another leaf will be torn out of the leaden Book of Torments.

A RECOGNITION OF SERVICES RENDERED BY HOSPITALS.

That hospitals should be compensated for services rendered to those who though belonging to the humbler classes, nevertheless receive such treatment that without it death would probably supervene, is an illuminating idea that has come to us by way of London. In a recent action tried in the King's Bench Division by Mr. Justice Darling the jury awarded to the plaintiff, a boy who had been seriously injured through being knocked down by an omnibus, £750 damages, and at the judge's suggestion the jury also decided to turn a certain part of the damages over to the hospital in which the boy had received the surgical intervention which saved his life. To quote Mr. Justice Darling: "In a case

like this, where a person receives the benefit of a charitable institution and such benefits as have been conferred on this boy; where it is perfectly obvious that the boy would have died but for the accurate diagnosis of the clever house surgeon, the immediate decision that an operation was necessary, and the calling in of a skilled surgeon; and where the staff of the hospital has exercised such skill, a substantial contribution should be made to the institution."

Here we have considerable food for thought. With a carelessness, not to say ingratitude, the public at large has always demanded the best medical or surgical treatment from our hospitals without so much as a thought as to the skill which is exercised by the physician or the surgeon at a critical moment, or the expense of harboring, with care and solicitude, a patient in regard to whom no idea of compensation could be entertained. The accepted fact that our hospitals with their corps of skilled physicians and surgeons must not withhold from a poor patient who has met with an accident or who is critically ill, the immediate relief which it is in their power to give, has passed beyond the province of controversy; but when after receiving the benefits which only scientific treatment can bestow, a patient is awarded damages, all courts throughout the world should imitate the wisdom which Mr. Justice Darling showed in the recent case tried in England.

The popular idea that the men who preside over the destinies of our hospitals are above recognition for their own services, and are indifferent to the welfare and prosperity of their institutions, is born of a figment on the part of the public that the best fruits of medical or surgical skill are theirs by right, irrespective of the possibility of a public acknowledgment as was instanced in the English judge's words, or a monetary return to a hospital in case damages are awarded.

Skill is only acquired after many years of apprenticeship; and to take it as a matter of course, to be had for the mere asking, is placing it on a low rung in our estimate of unusual qualities. Again, skill, as we all know, cannot always receive its due reward in a monetary sense, nor would we have the possessors thereof delight in its possession merely as a means to that end, but it should enjoy the compensations which come from an appreciative sense of its value. A public that jogs on from precedent to precedent and accepts a thing just because it has become inured to it, needs a jolt to awaken it to a proper understanding of certain abuses which, by custom, have become inherent in our social system. And the custom to regard a surgeon's skill and a hospital's care of the sick, especially in such circumstances when intervention is imperative, as a matter of small significance indicates an insatiable desire on the part of the public to get the lion's share of what this world offers,

with no better thought behind the effort than avarice, greed and selfishness.

THE COMING CONGRESS—WHAT IT SHOULD DO FOR THE MEDICAL PROFESSION.

The session of Congress about to convene in Washington bids fair to be a memorable one. Numerous measures, of vast importance to the country, will be presented to that body for its consideration and it is the hope of all of us that wise statesmanship, rather than party lines and special interests, may so govern Congress that the various legislative measures we are so much in need of may be promptly forthcoming and may be born with such strength as to immediately work for the country's good. And of all the measures for consideration the most important is the one involving the welfare and health of the army.

As a nation waxes rich and great it is looked upon with suspicion by other nations; it excites their cupidity in so far as its increasing wealth becomes a tempting object for plunder. No matter how righteous the nation may be it is subject to attacks of designing politicians and statesmen among all the nations of the world; and every now and then there comes a time when it must assert its own dignity and punish infringements on its personal rights.

To combat these untoward tendencies from without, a nation must have recourse to the law of nations and to its army and navy. Unfortunately the world has not yet reached a stage when a community can get along without a police force nor a nation without an army and navy. And they must be adequate! At the time of the Japanese riots in San Francisco last year, when the Japanese Government, according to press reports, was threatening us with retaliation, no thinking man among us but felt glad that our navy had strength to show and was not the poor excuse for a navy which obtained among us some ten years ago.

Americans have ever been kindly disposed towards their navy and willing to vote appropriations for its maintenance and increase. In times of war they have been kindly disposed and proud of their army, too, but in peace they are too prone to forget their little army which is being constantly trained and kept ready to form the basis upon which that large body of volunteers—really our main reliance—is to be placed.

Our present army, with one exception, is a wonderful organization. It is a highly trained little nucleus, built to the end that it may, in emergency, be instantly expanded so as to embrace a large body of citizen soldiery and furnish them with a corps of experts ready to perform the technical duties requiring a special training. The one weakness of our present army organization is its medical department and that is the most im-

portant department of all. Sherman said "an army moves on its belly," and so it does, but that belly must be kept in perfect working order or the army fails to move. Not only must that belly be provided with rations but there must be a medical department constantly on the alert to see that those rations are of the proper kind and that that belly is not poisoned with impure water. "An army moves on its belly"—rather it moves on its sick roll and the larger that roll the slower it moves.

The history of all wars, with the exception of the Russo-Japanese, has shown that far more men are lost through diseases than by being wounded and the sad part of it is that a number of these diseases are preventable. The records of the Japanese, in their war with Russia, as attested by all foreign observers, bear unanswerable testimony to the value of an adequate and trained medical department. Because of the efficiency of their medical officers they have reversed all records of previous wars. The causes of this deplorable deficiency in our military establishment and of the efforts which have been made to remedy it, were dealt with in an editorial in our May number. The matter has not lost in importance during the summer. On the contrary, certain events of the summer have shown us more clearly the necessity for having our little army perfect in all its parts. With the opening of Congress "A Bill to Increase the Efficiency of the Medical Department of the Army" will again be introduced. This bill has received the endorsement of the united medical profession of the country, of President Roosevelt, of two Secretaries of War and of the General Staff of the Army. It has already been passed by the Senate and would have been passed by the House but for a strange antipathy to the bill exhibited by the Speaker of that body and his refusal to allow the bill to come up for vote.

LITERARY NOTES.

In a letter recently printed in the *Journal des Débats* (Paris) there is a frightful picture of the ferocious manners of the Russians of today and the transformation that is going on in Russian society due to alcoholism, socialism, revolutionary ideas and the worst sort of ignorance. The physicians appear to be the principal sufferers from this chaotic state. "The workman in the large towns," says the writer of the letter, "is host to the grossest superstitions. It is nothing unusual for him to be tainted with the deepest cynicism which manifests itself in exhibitions of force and violence. This is particularly true of the Polish workman. At Warsaw, Lodz, and in fact throughout the Vistula region, an actual count of the acts of terrorism would be impossible. At present the medical practitioners seem to be the honored victims of the itinerant anarchists. By communicating with the Society of which they happen to be members to the effect that they were maimed whilst undergoing

treatment with their respective physicians, when the truth is they haven't so much as a scratch to show, they are sanguine of a large indemnity and, sad to relate, their hopes are often realized."

The procedure is of the simplest. About four or five call on a physician at the same time and demand, with little grace, a certificate attesting their infirmities. The physician, after examination, pronounces them in excellent condition and refuses to accede to their demands. Thereupon, these so-called heroes draw their pistols and level them at the inoffensive practitioner. Considerably frightened, he at once recognizes the character of his clients and knowing that resistance would be useless, addresses the following questions to each of the bandits: "What ails you, my friend?" "One of my lungs is gone." "And you, my friend?" "My chest is caved in." "And how about you?" (addressing the third terrorist). "O, I have a paralysis of all the nerves in my head!" And thus the farce continues. Docilely, the physician fills out the certificates and with due graciousness escorts his amiable clients to the door, thankful that the spirit did not move them to seize boldly some precious ornament as a souvenir of their memorable visit.

The Quarterly Journal of Medicine, edited by William Osler, J. Rose Bradford, R. Hutchison and W. Hale White has been issued by Henry Frowde, Oxford University Press. The names of the editors should prejudice us for the excellence of the journal, and to judge by the contents of the first number it will rank with the best English medical publications.

Every now and then we come across a book whose purport, while not apparently far-reaching, nevertheless awakens us to a sense of our own shortcomings. Such a book is E. V. Lucas's "The Gentlest Art." (The Macmillan Co.). Here we have an anthology of letters written by the best English writers and surely he must be a dullard who can not glean from its pages a few lessons in the art of letter writing. When we recall the stiff and academic style physicians indulge in, even in their intimate correspondence, we surely do not go far astray in recommending for the improvement of their epistolary manner, a book of E. V. Lucas's charm and human characteristics. A difficult art, indeed, is letter writing and mastered only by a few, but this should not discourage us for even though we may not achieve the distinction of perfection, we should strive to model our efforts after those letters that have the stamp of naturalness, in the hope that by so doing our own attempts will be more individualistic.

The well known German publisher, Carl Marhold, Halle a. S., has recently published G. von Voss's "Der Hypnotismus, Sein Wesen, Seine Handhabung und Bedeutung f. d. prakt. Arzt." While this small book teaches us nothing new on the subject of hypnotism, its compactness, terseness and thoroughness are highly commendable. Students would do well to read it on account of its complete résumé of a most interesting subject.

ORIGINAL ARTICLES.

THE PRESENT CLINICAL ASPECT OF STOMACH SURGERY.

BY A. J. OCHSNER, B. S., F. R. M. S., M. D.,

Surgeon-in-Chief of Augustana Hospital and St. Mary's Hospital; Professor of Clinical Surgery in the Medical Department of the University of Illinois, Chicago.

It is indeed with great pleasure that I have accepted the invitation of your distinguished president to speak before this great Association on a subject which has been most interesting to me since its appearance on the field of surgery.

Stomach surgery has, since its introduction by Billroth, been fostered by the most active and brilliant members of our profession. In Austria the names of Billroth, Woelfler, v. Hocker, v. Eiselsberg; in Germany those of Czerny, Mikulicz and their assistants; in Switzerland those of Kocher and Roux; in France that of Hartmann; in England those of Robson and Moynihan, and in our own country, those of Mayo, Murphy, Munro, and that of your president, Dr. Tuholske, are all so well known that it is scarcely necessary even to refer to them.

There are, however, so many others who have contributed valuable work to this subject that in a review of the literature which I undertook nearly two years ago, and which I have continued ever since, I have been greatly impressed with the splendid work which has been done on all sides in this subject. In a limited paper it would be hopeless to give credit to even a small portion of these faithful workers and I will consequently give only the results of these observations without going into detail.

No Original Methods. I will, however, distinctly state two facts at the outset in order that I may not be misunderstood; 1st, I shall not introduce into this paper any method or idea for which I have any personal claim as regards originality or priority. All of the methods which I employ have originally been introduced by others, and have simply been chosen by myself because they have seemed better than others, and they have been retained because experience in their use has proven them to be valuable. Many other methods have been tried and discarded. Some of the methods now in use will surely be discarded in the future, although they seem best fitted for our use at present. There will undoubtedly be newer and better methods to take their places in the future.

All Methods have been personally tried. 2nd, these methods have all been tested personally by myself in every instance usually in many cases as I have operated upon more than five hundred patients for the relief of diseases of the stomach. Four hundred and nine of these patients were operated in the Augustana Hospital, and of these I have carefully kept histories.

Difference of Opinion Between Internist and Surgeon. It may be well to direct attention for a moment to some reasonable grounds for differences of opinion regarding the relative value of medical and sur-

gical treatment of stomach diseases by members of the medical and surgical divisions of our profession.

First: The cases of gastric disease which are speedily and permanently relieved by dietetic, hygienic and medicinal treatment by the internist never come in contact with the surgeon, hence he has no practical experience with the great amount of good that is accomplished in these cases.

Second: The surgeon does constantly come in contact with only those cases in which internal treatment has either failed altogether to give relief, or has given only temporary relief. To make this feature worse most of these cases have been declared cured repeatedly by the various internists who have treated them through their recurrent attacks only to relapse and fall into the hands of other internists, with the same result, until they have reached the care of the surgeon. He naturally imagines that because all stomach cases who come under his care belong to a class which each one of a number of internists imagines he has permanently cured, therefore all cases which the internist imagines cured must ultimately also relapse. This conclusion is however not borne out by facts, otherwise all cases suffering from gastric disease should at once be transferred to the surgeon.

Third: Another equally unfortunate experience comes from the fact that frequently cases of incipient carcinoma of the stomach are temporized with by the internist until the case is in a hopeless condition. Then the case is referred to the surgeon, while from the very nature of things, the only time when reference could have brought any benefit to the patient was at the time when the internist was first consulted.

Fourth: On the other hand the internist has equally deceptive experiences. He is constantly consulted by patients who have undergone stomach operations, only to be worse for the experience. Many of these cases have undergone several operations at the hands of several surgeons and have become successively worse.

Fifth: In many instances a gastro-enterostomy has prolonged the life of the patient suffering from pyloric obstruction due to carcinoma, only to prolong the patient's misery, and the internist has been forced to carry the burden of the patient's care during these weeks or months of prolonged suffering.

It is easy for the internist to imagine because he sees many cases who have not been benefited, and some that have been harmed, by their surgical treatment, and only few showing permanent cures, that therefore surgical treatment must be bad, forgetting that there is no reason why he should come in contact with the many satisfactory results, outside of the few cases which may have gone to the surgeon from his own personal practice and this number must, of course, always remain small.

Sixth: Moreover, the surgeon constantly encounters great indurated ulcers and advanced carcinomata which the internist has attempted to heal by internal remedies.

Seventh: On the other hand the internist encounters patients suffering from neurasthenia, locomotor ataxia and hysteria, which have either had

stomach operations advised, or actually performed, by over-enthusiastic surgeons.

In order that this difference may be eliminated as speedily as possible it seems most important that the internists make a regular practice of witnessing operations upon the stomach. If they see the pathological condition in the living body, in a large number of cases, they will become quite as thoroughly convinced of the value of stomach surgery as they are now concerning the surgical treatment for appendicitis, gall stones and renal calculi.

Fortunately many internists in the large hospitals are doing this, and this may result in a vast amount of good to a large number of patients.

On the other hand, the surgeon should take the time to observe the progress of patients, in the medical wards, suffering from acute gastric disturbances, including ulcers in their early stages before a marked induration has taken place, so that he may learn to appreciate what can be done in these cases by dietetic, hygienic and medicinal treatment.

This plan would result in convincing the surgeon that most patients suffering from disease of the stomach can be successfully treated to perfect and permanent recovery by dietetic, hygienic and medicinal treatment, the permanency, of course, depending upon long continued care in regulating the diet and hygiene of the patient after recovery from the acute condition. This point has been sadly neglected by internists and quite as commonly by surgeons, after the patient has recovered from an operation.

The surgeon will also learn that, barring cases of perforation and traumatism and uncontrollable hemorrhages and malignant growths, only those cases of stomach disease are suitable for surgical treatment that have failed to be permanently relieved by careful, persistent dietetic, hygienic and internal treatment.

The internist, on the other hand, will also learn to place this class of cases under surgical treatment relatively early.

Conditions to be secured by surgical treatment. At the present time surgery of the stomach is limited in its results to three conditions:

1. The closure of the defect following perforative ulcer or gunshot or stab wounds, or rupture of the stomach due to traumatism.
2. The establishment of drainage in cases of obstruction of the pylorus due to neoplasms, cicatricial contraction, the presence of indurated ulcer or hour-glass stomach in the adult, and the presence of congenital stenosis in children.
3. The removal of neoplasms; and possibly
4. The correction of gastroptosis.

Whatever operation is performed for the relief of gastric disease it is reasonable to demand that conditions be established which will place the stomach, as nearly as possible, in a normal condition from a mechanical standpoint. On the other hand it is reasonable to expect this organ to be somewhat less perfect in a mechanical or anatomical way than a normal stomach even after the most perfect operation.

At this point it may be well once more to direct attention to the mechanics of gastric digestion. In order to make this more easily understood the accompanying diagram may serve as an illustration.

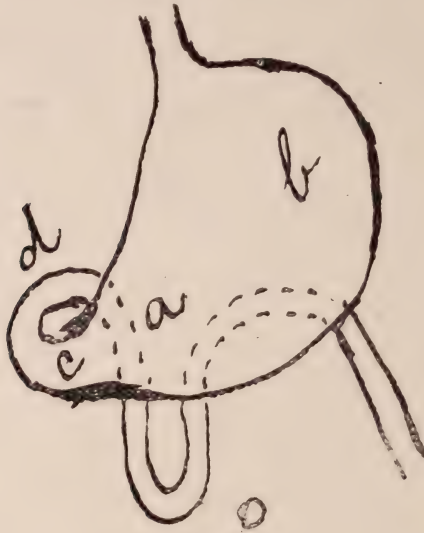


Fig. 1.

We must look upon the stomach as a machine with five distinct functions: First, it serves as a store room for one meal; second, it secretes certain substances necessary in the digestion of food; third, it serves as a mixing machine which saturates these foods, which are held in storage with the substance secreted; fourth, it grinds the food into fine consistency proper for the further steps, which are accomplished after this substance has been forced through the pylorus into the intestinal canal; fifth, to a very slight extent absorption of food takes place directly from the stomach, but this is almost a negligible factor.

As a matter of fact it is always proper to consider the duodenum with the stomach because the two portions of the alimentary canal are really one organ, both as regards their embryonic origin and their physiological function, and these two portions are also closely related in their diseases.

Referring to the accompanying figure, the portion *b* must be looked upon as the storehouse and mixing apparatus, and the narrow portion *a* as the grinding apparatus. The position of the stomach favors the accumulation of the finer portions of food at *A* where according to Cannon they are crushed back and forth until a suitable consistency has been reached when the pylorus *C* opens and a definite quantity is forced into the duodenum *D* which again serves as a mixer, the material added at this point consisting of bile and pancreatic fluid.

It may be plain that any one of the operations mentioned above, must interfere, to some extent at least, with some portion of this mechanism, and it is for this reason especially, that we should never interfere with this organ surgically if it is possible to restore the latter to even an approximately normal anatomical condition, by dietetic, hygienic or

medicinal treatment. The result after the most perfect operation cannot produce a stomach which will bear the dietetic abuse that can be imposed upon a normal stomach.

There is no doubt that many a patient would remain permanently well after recovering from ulcer of the stomach, after a careful course of dietetic, hygienic and medicinal treatment, if he would subject himself constantly to the care which becomes imperative after a stomach operation.

Those internists who appreciate this fact, and who tyrannize over their patients for years after their recovery from gastric ulcer are the only ones whose patients do not ultimately seek relief from surgery.

It may then be stated as an axiom:—

1. That certain conditions, like gastric perforation and gastric neoplasms, should receive surgical treatment as soon as a diagnosis has been made.

2. That other diseases of the stomach, like gastric ulcer and its sequelæ, should receive surgical treatment whenever it becomes apparent that the condition cannot be relieved by dietetic, hygienic and medicinal treatment.

That a vast majority of gastric ulcers will heal under careful and persistent dietetic, hygienic and medicinal treatment, has been demonstrated, not only by clinical observation, but also by many careful experimental studies upon animals, notably those by Fibrich and those by Fuetterer. In all of these cases one must however bear in mind that most of these patients started with normal stomachs, and that as a result of certain hygienic and dietetic conditions or abuses to which they were exposed, this pathological condition has resulted. Taking for granted then, in any given case, that the lesion has healed perfectly, it is not reasonable to expect this lesion to remain well unless the conditions which gave rise to the disease primarily are permanently eliminated.

It is therefore extremely important not only in the after-treatment of patients who have been relieved of their gastric diseases by internal treatment, but also in those that have undergone surgical treatment, that sufficient attention be paid to hygienic and dietetic conditions after the patient has fully recovered.

Relief of pyloric obstruction. More real benefit is done the patient by relieving pyloric obstruction than by accomplishing all other surgical results in stomach surgery. This makes it proper to give this feature some especial attention in this discussion.

Whatever the cause of obstruction may be at the time the patient comes under the surgeon's care, in a vast majority of cases the primary cause was an ulcer in this portion of the stomach which is most exposed to trauma from within because of its especial function.

The obstruction may still, although only rarely, be due to spasmodic contraction due to the presence of an ulcer; it may be due to the healing of an ulcer, or to the implantation of a carcinoma in the base of an ulcer, or even to adhesions due to the threatened perforation of an ulcer.

The symptoms will vary with the extent of the obstruction and the

acuteness of the condition, but there is usually quite a definite course which may be followed in most cases which have persisted sufficiently long to come under the care of the surgeon.

Clinical course of these cases. Clinically these patients either recover under dietetic and hygienic treatment, or the stomach undergoes anatomical changes such as are illustrated diagrammatically in figure 2.



Fig. 2.

The case in the meantime takes the following typical course. In non-congenital cases, the obstruction at the pylorus in its early stages is accompanied with a considerable degree of pain, which is usually located between the ensiform appendix of the sternum and the umbilicus. The patient feels distressed after eating, and the distress is more marked after the ingestion of certain foods. The patient begins to classify various articles of food according to the amount of discomfort they produce. Acids and raw fruits usually cause the greatest amount of distress. During this portion of the course of the disease, the distress is usually greater if a large amount of food is taken, than if the patient eats but a small amount. Gastric lavage will show the presence of a great amount of mucus, which is secreted for the purpose of protecting the painful point. At this time the stomach is not enlarged, and there is frequently a compensating hypertrophy of the muscular wall of the stomach to overcome the obstruction at the pylorus. If the latter persists, however, hypertrophy will give place to dilatation; this will at first be slight in

degree, as shown at 2 in figure 2. In the meantime, the accumulation of mucus interferes with the gastric digestion because it covers the surface of solid portions of food which have been placed in the stomach. To compensate for this condition, there is a physiological increase in the secretion of hydrochloric acid, which in turn causes an increase in pain because of its irritating effect upon the pyloric ulcer. The difficulty of emptying the stomach contents into the duodenum will now be increased from one of two causes. The ulcer may become partly or completely healed, and this may result in cicatricial contraction of the pylorus which will in turn increase the obstruction; or, the base of the ulcer and the tissues surrounding the ulcer will contract, thus causing a mechanical increase in the obstruction. A third condition which has frequently been mentioned as an important cause, is the spasmodic contraction of the sphincter muscle of the pylorus, due to the presence of an ulcer within the grasp of this muscle. It is likely that this factor is more active in the early than in the later stages of pyloric obstruction.

In the meantime, the dilatation of the stomach continues as indicated at 3, figure 2, so that the greater curvature extends a considerable distance below the umbilicus. This dilatation may be so great as to permit the greater curvature of the stomach to rest in the pelvis of the patient, a condition observed in one of my patients. This condition induces another important factor in the mechanism of digestion. In the normal condition the food in passing from the stomach into the duodenum, must be elevated only the distance from C to F, in figure 2, while in the extremely dilated stomach it must be lifted the much greater distance from 3 to F, figure 2. Moreover, the course which the food has to pursue in passing from C to F, extends over a smooth, non-sacculated surface, while in its course from 3 to F there is likely to be formed at 4 a valve-like projection which will serve as a serious obstruction to the passage of food through the pylorus into the duodenum. At this point of the course of the disease, the stomach becomes incompetent to empty itself completely and there remains constantly in this lower pouch a certain amount of residual food. Here, as in every cavity in the human body, the retention of residual contents favors the development of micro-organisms and in a short time a severe degree of fermentation and decomposition will take place, and the patient will begin to absorb these products of decomposition instead of absorbing the products of normal digestion. At this point severe symptoms of malnutrition will appear. A careful use of gastric lavage, together with hygienic and dietetic treatment will frequently prevent the progress of malnutrition by removing these decomposing substances, and supplying food which can readily be absorbed. But it is not likely that in any of these advanced cases the mechanism can be restored to approximately normal conditions without the aid of surgical interference. In cases, however, which have not progressed to this extreme degree, it is undoubtedly frequently possible to restore the anatomical conditions to approximately a normal state.

- It is well to emphasize especially the importance of hygienic measures. One frequently encounters a case of almost hopeless stomach disease in

a person of sedentary habits, over-worked mentally, who goes out on the plains, and returns after a number of months with the best stomach in town. So it is well to impress the importance not only of dietetic and medicinal, but also of hygienic measures.

We have then a stomach that is hopelessly ruined. After having tried all these measures we find that the stomach is still in this pathological condition. At this point the condition may be accompanied by an open ulcer, or the ulcer may have healed and there may be a cicatricial obstruction at the point of its location, or this obstruction may be due to a more or less extensive induration at the base of the ulcer.

If the ulcer is still open, we have a number of very definite complications to fear, besides the malnutrition, the discomfort and the disability of the patient. We have to consider the possibility of perforation of this ulcer and immediate sudden death of the patient, the latter losing his life by the loss of a great amount of blood suddenly, or by intermittent hemorrhage. We must also consider the possibility of having a carcinoma implanted upon this ulcer.

That this condition occurs in many cases of chronic ulcer of the stomach has been observed by many surgeons. It has been investigated with great care in a very large number of cases by Graham.

At this point it may be well to emphasize the fact that in this condition, as well as in all other intra-abdominal conditions, such as pyosalpinx, appendicitis, extra-uterine pregnancy, gall bladder disease, the diagnosis has been perfected to a reasonable extent only as a result of the operation. When operations were begun for each and every one of these conditions, the views which we held were extremely vague. It has only been from the fact that as a probable diagnosis was made, and it was either proven or disproven by a surgical operation, we have been able to come to a reasonable degree of certainty in our diagnosis. So that both the surgeon and the internist should, in every instance in which the abdomen is opened for the relief of a condition of the stomach, be present at the operation, and should determine whether the ideas formed concerning the conditions to be found are correct or incorrect; because upon the ability to diagnosticate them properly will depend our ability to treat these cases properly later on. -

Technic. The general technic of stomach surgery must be learned at the operating table. More can be learned in a week's observation in the operating room of any one of the many great clinics in which gastric surgery is practiced in this country and abroad than by listening to descriptions or reading them for months.

There are, however, a few fundamental principles which must be observed in order to secure permanently satisfactory results.

1. The amount of traumatism must be reduced to a minimum.
2. The intra-abdominal organs must be exposed as little as possible to cold air or cool pads.
3. The patient must be placed in a sitting posture as soon as possible after the operation.

4. In case of closure of perforation, the direction of the wound must be chosen so as not to result in obstruction later as a result of cicatricial contraction.

5. In case of excision of a neoplasm, all the tissue closely connected must be removed with the growth to the greatest extent possible in the presence of existing anatomical relations.

6. In gastro-enterostomy the lowest portion of the stomach must be chosen, no matter whether anterior or posterior gastro-enterostomy be performed, the latter however being preferable.

7. There must be no tension upon any sutures in any gastric operation.

8. Except in complete gastrectomy, the coronary artery must always be preserved.

9. In patients with an unusually fat transverse meso-colon, in whom posterior gastro-enterostomy is performed, the opening should be torn very large and the edge should be sutured to the stomach in order to prevent obstruction.

10. In case of acute gastric dilatation following any stomach operation, a stomach tube should at once be introduced and gastric lavage be employed, care being taken not to introduce more than one-fourth liter of water at a time.

11. The simplest possible technic should be employed, preferably without the use of mechanical apparatus.

STASIS HYPEREMIA (Bier).

BY M. G. SEELIG, M. D., of St. Louis, Mo.

In this brief paper on the subject of stasis hyperemia, I shall endeavor to sketch in outline and general resume both the scientific and the clinical aspects of the subject. The attempt will be made, therefore, (1) to trace the origin of the idea developed by Professor Bier, (2) to describe the types of hyperemia, (3) to outline the physiological action of hyperemia and (4) to comment on the clinical results secured.

During his early career, while investigating the observation of Rokitansky, that patients whose lungs were the seat of chronic congestion, resulting from mitral insufficiency, rarely suffered from pulmonary tuberculosis, Bier was struck by the thought that chronic pulmonary hyperemia was a prophylactic against tuberculous inflammation. After taking up his residence at Kiel in Esmarch's clinic, and later at his own clinic in Griefswald, he elaborated his ideas along the line that hyperemia, properly induced, was a curative agent, to be used against almost all types of chronic inflammation. In 1893 he published his book *Hyperaemie als Heilmittel* (Hyperemia as a therapeutic agent) but the work attracted only moderate attention. Meanwhile, he had been called to the surgical chair at Bonn where he continued his investigations and where he made the announcement that succeeded both in bringing his views into the limelight and in keeping them there. The doctrine which served to establish hyperemia securely as a therapeutic measure, was that it was curative not only for chronic inflammations, but also for acute surgical infections. It may be said at the very outset that the views enunciated by Bier have been confirmed and reconfirmed.

No brief presentation will do full justice to so broad a subject as hyperemia. A study of Bier's published work is an absolute essential to a thorough comprehension of all the principles involved and the methods used. Not the least important part of the book is the illuminating preface, in which is stated in popular terms, reasons for revising our views concerning the phenomena of inflammation until they fit in with facts developed by modern investigative work. Inflammation itself is not a noxious process; on the contrary, regarded in the Darwinian sense, it is one of the variations fitting the organism better to its environment. On this basis, the underlying phenomenon of the whole process of inflammation—hyperemia—is not a symptom to be shunted off, but a symptom whose development is to be encouraged.

Rational encouragement of this sort necessitates a knowledge of the types of hyperemia. Of these types, there are two, active hyperemia, and passive hyperemia. Active hyperemia is induced by securing a more rapid arterial flow, passive hyperemia by retarding the venous return. Heat (hot water or air) vesicants, counterirritants and massage, all induce active hyperemia, and of all these methods, warmth is the best. By numerous experiments and logical inductive reasoning, Bier shows that this active hyperemia occurs independently of the action of the central nervous system, and is not confined to the skin, but extends to

the tissues underneath. Passive hyperemia is induced in one of two ways, either by obstructing the venous return by means of a band wound about an extremity, or by means of cups or larger vessels out of which the air may be exhausted with a pump. An elastic band properly applied about the arm to induce an hyperemia, causes first a turgescence of the small subcutaneous veins, then of the larger veins; the skin of the arm gradually assumes a bluish tint, while the fingers are fairly red. On the palm of the hand there develop small, circumscribed, whitish spots. After about three hours, the entire extremity, palm and fingers included, are a bluish red and the veins stand out prominently, but not as prominently as before. By finger pressure one can make out that there is slight edema. All the while the pulse at the radial should be full and strong. After about ten hours the edema is much less noticeable than before, but the whole extremity which is noticeably larger than before congestion was begun, is distinctly warm to the touch and is free from pain. Passive hyperemia, in common with active hyperemia, though practiced by the ancients, had fallen into practical disuse until revived as a result of Bier's investigations. Ambrose Pare advised congesting a limb by means of a constricting band in case of scanty callous formation and there is reliable evidence to prove that the aborigines used the horns of animals as cups.

Such then being the types, what can be said of the physiological action of hyperemia? It will be borne in mind that immediately following the induction of hyperemia, the parts dealt with are more richly supplied with blood and lymph. In the case of active hyperemia, there is a more rapid inflow of blood and lymph; in the case of passive hyperemia an impeded outflow, and, hence, in both instances, a larger quantity of these body fluids are present.

The physiological action resultant from this influx may be embraced under five heads: Lessening of pain, destruction of bacteria, absorption of exudates, solution of dead cells, tissue and debris, and increase in nutrition of the part. To take these up seriatim.

Lessening of pain: Bier states that no physiological action of properly induced hyperemia is more pronounced than is the lessening of pain, such as that accompanying a rheumatic joint, an acute phlegmon and certain types of headaches or neuralgias. The explanation of this pain-quelling property is the same as that offered by Schleich for infiltration anesthesia, viz., that the edema caused by the hyperemia, saturates the tissue and thus lessens the irritability of the sensory nerve endings.

Bactericidal action: The brilliant experiments of Noetzel (Arch. f. klin. Chir. B. 60. H. 1.) illustrate better than any other statement just what is meant by saying that hyperemia is bactericidal. Noetzel administered fatal doses of anthrax bacilli hypodermically to 51 guinea pigs. The injections were made into areas that had been subjected first to a process for inducing hyperemia and not one of the animals died. A few weeks later these same pigs were injected with the same doses but not in the presence of hyperemia and they all died. The explanations offered for this bactericidal power are numerous, and the investigative

work done along this line is far too voluminous to permit detailing it here. Suffice it, therefore, to say that this property may be due to the local accumulation of antibodies, to an increased number of phagocytes and an increase in their phagocytotic powers, to locally heightened alexin power of the blood, to a local increase of CO_2 which is bactericidal, or to an increased opsonic index. Bier himself confirms none of these theories, satisfying himself merely with the statement that they all demonstrate the fact that the bactericidal action of hyperemia is in accord with the modern ideas of infection and immunity.

Increased absorption: As regards the increased absorptive power induced by hyperemia, Bier shows that active hyperemia in all parts of the body favors absorption directly into the blood stream, and that passive hyperemia delays this absorption until the body fluids have rendered the elaborated toxins partially innocuous. Lexer (Muench. Med. Woch. No. 14, 1906) has used this phenomenon as an argument against the therapeutic value of hyperemia. He asserts that absorption is delayed by obstructing the venous return but he believes that removal of the obstruction is followed by the sudden circulation of a large amount of endotoxines resulting from bacterial death in the congested area. This contention of Lexer has not been confirmed.

Solution of dead cells and tissue debris: There are numerous pathological conditions for which a cure demands, first, that extraneous matter be disintegrated, such as blood clot, fibrin, young connective tissue and tissue bruised beyond repair; that hyperemia favors and directly leads to such absorption is confirmed by the numerous cases reported in literature in which joint adhesions, tendon sheath nodules and even keloids have disappeared. This power to dissolve we may well attribute to the increased number of phagocytes and to the increased quantity of fluid brought to the part through the agency of hyperemia.

Increase in nutrition: As a factor in increasing nutrition, hyperemia accomplishes its end in one of two ways. (1.) It may increase the nutrition to parts not invaded by disease. For example, true muscular hypertrophy not uncommonly follows hyperemia consequent to axillary or femoral thrombosis. In summer, when the skin is more vascular than in winter, the hair and nails grow with perceptibly more rapidity. In congested lungs, the lining epithelium grows so rapidly that it is cast off in quantities giving the so-called heart-failure cells in the sputum. In the congested area about a chronic ulcer, the epithelium always shows active proliferation. The hands and arms of a surgeon are usually covered with long hairs as a result of the hyperemia due to frequent scrubbing. (2.) It increases the nutrition to diseased parts, thus favoring regeneration. The proof of this statement rests almost solely on the now innumerable cases in literature in which tuberculous joints and bone lesions, defective callous formation after fracture, and persistent suppurating foci and tracts, show tendencies to rapid healing after being subjected to stasis hyperemia.

We now come to the proper method of inducing hyperemia, and here let it be said that the name of Bier is associated intimately, not with

hyperemia, but with "stauungs," or stasis hyperemia. In other words the hyperemia that is being used so extensively today is not active hyperemia induced by massage, counterirritants and heat, but passive hyperemia induced by partially obstructing the venous return.* The technique of inducing passive hyperemia varies in accordance with the method used. If cups are used the stasis hyperemia results consequent to vacuum formation, whereas if the constrictor is used, the hyperemia results from actual mechanical opposition to the venous return. The constrictor, a 2½ inch Esmarch bandage, is applied by taking several turns about the extremity proximal to the lesion; just enough force should be used in applying the bandage so that the extremity becomes neither cold nor mottled blue in color and so that the patient does not suffer discomfort. The radial artery, or the dorsalis pedis, must continue to pulsate with a fair degree of force, the superficial veins must stand out prominently, the skin must show the deep bluish red color of hyperemia, and after a time there should be signs of slight edema. In the early editions of Bier's book he recommended 18-20 hour applications of the constrictor, but his last advice is to use it only for one or two hours at a time. When the cups are used the vacuum created should not be so complete as to cut off the circulation, and the cup should be left on for three-fourths of an hour, during which time it should be removed for about a minute every five minutes. One factor of great importance in the use both of the constrictor and the cups, is that egress should be afforded any pus by a small incision. For an abscess the size of half a fist I use an incision one-fourth inch long. After the area involved has been congested for the desired time, a wet pack is applied, all drains and wicks being dispensed with. In markedly indurated and inflamed infections, it is well to make a small incision, even if no pus is present, but if there be a single or multiple foci of pus, as, for example, one on the dorsum and one on the palm of the hand, it is absolutely essential that each focus be opened by means of a minute incision.

In regard to clinical results, time does not permit me to detail to you the almost innumerable cases recorded in literature. I shall confine myself, therefore, to the bald statement of two facts: firstly, that all the clinicians who have used stasis hyperemia properly, as a therapeutic measure, are practically unanimous in the praise they accord the method in their publications; secondly, that in my own hands, the method has yielded results which I do not feel I am over-enthusiastic in characterizing as astonishingly excellent. I have used the method in over 150 cases at the Jewish Dispensary, during the past two years, and it has never failed, when properly applied. I have shortened the duration of treatment from 50 to 75 per cent. and our patients have been spared the pain and discomfort attendant upon large granulating wounds and packed sinuses.

In closing, just one word regarding the contraindications to the use of hyperemia. So far, according to Bier, there are only two specific contraindications, viz., diabetes and hemorrhage. Some authors have contended that acute streptococcic infections are aggravated by the use of the method; but in answer to these men Bier replies that the aggravation of the symptoms has been due, not to hyperemia, but to improperly induced hyperemia.

A BRIEF REPORT OF THE FIRST YEAR'S WORK AT THE
CLINIC FOR COMMUNICABLE LUNG DISEASES
OF THE ST. LOUIS CITY DISPENSARY.

BY LOUIS M. WARFIELD, M. D., St. Louis, Mo.

The Clinic for Communicable Lung Diseases of the St. Louis City Dispensary was opened on July 6, 1906, and placed in charge of one assistant dispensary physician. The work has grown slowly, but surely. It has already been found necessary to divide the work between two men, and we look forward very soon to a reorganization of the department that, it is believed, will add much to its efficiency.

It was soon apparent that a dispensary without a visiting nurse was not of much value either to the one in charge or to the community. People would present themselves for examination once and never return. Some dragged themselves to the dispensary and then went back home to bed, never to return to the clinic. Although earnest efforts were made to instruct all who came to the clinic as to the dangers of the disease, the precautions to be taken by the patient and his family, and literature was given to all, it was felt that unless there was a nurse who followed up such cases, the usefulness of the dispensary would be much curtailed.

It was in this crisis that the Society for the Relief of Consumptives was organized. Our main object was to go after the individual consumptive and show him how to live so that he might become not only less of a menace to his family and the community but also to himself. We believed that the proper way to spread the antituberculosis propaganda was to make every patient a focus of education in his small circle of acquaintances, for we were certain that what he could say from his own experience would carry much more weight than many set lectures. Not that we neglected the lecture side, but we felt that it was imperative to have active lieutenants in the slum districts.

About the middle of January, 1907, we put into the field in St. Louis the first visiting nurse who was to devote her time exclusively to patients suffering from tuberculosis in all its forms, but particularly consumption. Later the society was consolidated with the already existing Society for the Prevention of Tuberculosis, and we were able to add another nurse to our work. These nurses are paid by the Society for the Relief and Prevention of Tuberculosis, and although most of the cases on their visiting lists are patients of the City Dispensary tuberculosis clinic, the city has not, thus far, contributed to the support of the nurses. We hope that this will come later. We do not see that it is possible to carry on a successful campaign without the aid of the nurses. In our opinion they do far more good than the doctors among the class of patients seen in dispensary work. For some time to come the educational work, at least in St. Louis, must necessarily be the most important part. While physicians and interested laymen are doing their part in lecturing and in pamphlet distribution, such methods of work but skim the surface, leaving untouched the class of people whom it is most imperative to educate. Where the disease lurks, where there are the largest numbers of victims,

where intelligence is least, there must be the starting point in the education. It is in this very foundation work that the nurses are found to be invaluable. True, their work does not shine out, but the amount of cheer and hope that they infuse into the homes where they visit can never be estimated. They are the true soldiers, the real fighting strength of the campaign. Not only do they educate to better methods of living those who are already afflicted, but in many cases they have brought suspected cases to the clinic, and in some of those were found the early lesions of tuberculosis. This alone is sufficient to show the necessity of the visiting nurse.

Our nurses are doing splendid work in the face of many discouragements and, at times, I regret to say, some passive resistance from those who should be among the first to assist in this work. Their unflinching cheerfulness, in spite of all the difficulties, makes our work much lighter, and their enthusiasm stimulates those of us in charge of the work to greater efforts. No community can do without the nurse in this anti-tuberculosis campaign. One might as well go to war without weapons and expect to conquer the foe. To any city contemplating an active campaign, I say first get an enthusiastic nurse; she is more important than a doctor. Perhaps some will think that I put it too strongly, but those who have tried to work without the help of the nurses or of the "voluntary visitor" will, I believe, agree with me.

In my clinic were encountered the same difficulties that have been spoken of by other dispensary workers. I am inclined to think that owing to the class of cases that I have seen, I am a little more unfortunate than many others. As elsewhere, people purposely gave fictitious names and wrong addresses. They came once only. In my work the majority of the patients were men of the common laboring class who lived in lodging houses or cheap boarding houses. Most of them were in the advanced stage of the disease. The majority had spent all their money on "doctoring" and were absolutely destitute, and many were heavy drinkers. Many refused to go to the hospital and we have no law to compel them to go. They came to the clinic two or three times, giving every time a different address, and then vanished. What becomes of these "floaters" is a problem. Thus far we have not succeeded in keeping track of them. How to corral these disseminators of disease is a grave question that should be taken up and solved by our legislators at the very earliest moment.

All sputa from the patients were examined by the city bacteriologist at the laboratory of the City Hospital, over a half mile away from the dispensary. This was the most feasible method. The separation of our City Dispensary from the one City Hospital necessitates the sending of all specimens to the laboratory. There is no assistant in the clinic. The arrangements are very crude; two bare rooms on the ground floor of an old building, each with one window on the north. One is the waiting room, the other is the examining room. There is no separate room for males and females, and no dressing room. Moreover, the rooms are on the busiest traffic street in the city where at times the noise is so great

that examination is impossible. However, it is a start and we hope before long that we shall have better quarters. Patients who have throat complications are sent to one of the throat clinics connected with one of the medical schools.

A very unsatisfactory part of the work is the limited facilities for properly housing the cases and the lack of administrative control of the indigent advanced cases. The hospitals for advanced cases, the male and female wards of the City Hospital, and Mount St. Rose Hospital (a charitable institution), accommodating in all about one hundred and forty patients, are totally inadequate to care for the tuberculous poor. Moreover, there is not a single hospital, with the exception of Mount St. Rose, which is far from the center of the city and has a limited capacity, where private patients suffering from the advanced stage of the disease can be sent. I do not agree with the attitude assumed by the governors of private hospitals in regard to admission of patients with tuberculosis of the lungs. I can see no valid reason for excluding from private rooms such patients. It appears to me that by the exercise of the proper care, the dying consumptive attended by a special nurse is a source of danger that exists only in the imagination. A crying need is for more hospital facilities for such unfortunates.

In regard to the incipient and fairly early cases, those who seem to have a chance to recover completely, the situation is acute. The local Society for the Relief and Prevention of Tuberculosis has been earnestly working to get a plot of ground where we can start a tent colony. The summer has almost gone and although we have visited place after place, we seem to be no nearer our sanatorium than we were six months ago. It is truly discouraging. What hope is there for a person who lives on the ground floor of a tenement, in a room with one window looking at a blank wall a few feet away, surrounded by factories that are pouring out volumes of soft coal smoke laden with poisonous gases, when the patient or the family is too poor to move into better quarters? If this were an isolated case, means might be found to move such a person. But this is one of many. It makes us heart-sick to feel that such people might get well, yes, some surely would get well, could they only be placed where sunshine and fresh air and pleasant surroundings were. "Home treatment" for such people is absolutely out of the question even if we had the money to give them all the food that they should have. Besides, our landlords thus far have shown anything but a desire to assist us in our efforts to clean up some of the filthy places where some of our cases live. An earnest effort was made to start a class, but we regret to say that it was a failure. I am convinced that the class treatment has a very limited application. Among such patients as those who visited my clinic the free sanatorium is the only place where they may hope to recover their health. Perhaps before long a second Henry Phipps will arise in our midst who will be glad of the opportunity to sacrifice something while he lives in order not only to see the good that he can do, but also

to feel and know that his name will go down the high road of time as one of the really great benefactors of his suffering fellow men.

Many of our patients must be dead, more than twenty, but it impossible to say. The fact that so many were in the advanced stage of the disease when first seen would speak for a large death list. It was impossible from the nature of the large number of our cases to follow them up.

STATISTICS.

Total number of cases for year ending July 6th, 1907.....	421
Cases diagnosed tuberculosis of lungs.....	185
Bacilli found in.....	121
Bacilli not found (one case reaction to tuberculin).....	25
No microscopical examination of sputum made.....	39
Cases of probable tuberculosis.....	25
Cases of doubtful tuberculosis.....	10

AGE.

Under 5 years.....	1 case	30-40 years.....	53 cases
5-10 years.....	1 "	40-50 ".....	42 "
10-20 ".....	14 "	50-60 ".....	15 "
20-30 ".....	54 "	60-70 ".....	5 "
Sex: Male.....	126 cases	Color: White.....	166 cases
Female.....	59 "	Colored.....	19 "

Previous illness that had a bearing on the disease:

In 17 there was pneumonia.	In 10 there was pleurisy.
" 11 " " influenza.	" 3 " " fistula in ano.
" 5 " " typhoid fever.	" 3 " " were glands in neck.
" 2 " " an injury to the chest.	

EXPOSURE.

Cases exposed to members of immediate family.....	42
Cases exposed to husband, wife, or other individual.....	20

MODES OF ONSET.

Cough in.....	112 cases	Directly following pertussis.....	2 cases
General malaise in.....	29 "	Directly following pleurisy.....	1 "
Malaria (?).....	4 "	With a tuberculous pneumo-	
Gastric symptoms in.....	5 "	nia.....	3 "

HEMORRHAGE.

At onset.....	26 cases	During course.....	58 cases
---------------	----------	--------------------	----------

COMPLICATIONS.

Otitis media occurred in.....	2 cases	Cirrhosis of liver.....	1 cases
Iritis occurred in.....	1 "	Pneumothorax.....	3 "
Ischio-rectal abscess.....	1 "	Intestinal tuberculosis.....	1 "
Arteriosclerosis.....	1 "	Psoas abscess.....	1 "
Thickened pleura.....	3 "	Tuberculous laryngitis....(?)	12 "
Preurisy with effusion.....	1 "	Syphilis.....	1 "
Goitre.....	1 "		

COMPLICATING HEART LESIONS.

Mitral stenosis.....	2 cases	Aortic insufficiency.....	1 case
Mitral insufficiency.....	1 "	Myocarditis.....	2 "

STAGE OF THE DISEASE.

Acute tuberculosis.....	6 cases	Moderately advanced cases.....	74
Incipient tuberculosis.....	12 "	Advanced cases.....	93

SITE OF THE LESION.

Right apex.....	23 cases	Right lung.....	27 cases
Left apex.....	11 "	Left lung.....	24 "
Right upper.....	58 "	Both lungs.....	13 "
Left upper.....	21 "	Right upper and left apex.....	3 "
Right lower.....	4 "	Left upper and right apex.....	2 "
Left lower.....	3 "		

OCCUPATION.

Laborers	74	cases	Salesman	5	cases
Housework	39	"	No occupation	5	"
Porter	6	"	Iron foundry	2	"
Waitress	5	"	Carpenter	2	"
Shoe factory	5	"	Cigarmaker, bartender, drug clerk, up-		
Granite cutter	5	"	holsterer, cooper, butcher, seam-		
Clerk	6	"	stress, interpreter, bookbinder,		
Cook	6	"	stenographer, reporter, etc., one		
Laundress	3	"	each.		
Janitor	3	"			

CASES OTHER THAN TUBERCULOSIS.

(The list is a long one, so only a few will be given).

Normal	45	cases	Not diagnosed	8	cases
Asthma and chronic bronchitis	12	"	Influenza	17	"
Apprehension	18	"	Intercostal neuralgia	3	"
Simple anemia	13	"	Aortic insufficiency	3	"
Arteriosclerosis	8	"	Aneurysm	1	"
Acute bronchitis	8	"	Pleurisy, with effusion	2	"
Pneumonia, acute lobar	9	"	Pleurisy, simple fibrinous	1	"

It will be noted that although 185 cases were diagnosed tuberculosis, there were 84 cases in which no bacilli were found. Such cases included either no sputum examination in an advanced case from whom no specimen was obtained and who was seen but once, or one examination of sputum only. Further examinations could not be made for the patient never was seen again. In all these cases the symptoms and physical signs were sufficient to enable one to make a positive diagnosis.

My cases confirm the already large mass of evidence in regard to the prevalence of the disease in early adult life. Between the ages of 21 and 40 years there were 107 cases (57.8 per cent). If we include also the decennial 41 to 50, we have 149 cases (80.5 per cent).

We think it strange that we should have had so few negroes, especially in view of the fact that there is here a very large negro population, the death rate from tuberculosis among whom is much greater than among whites. It is difficult to account for this.

In some of the cases a pneumonia, or influenza, or an attack of measles was followed shortly by symptoms of tuberculosis. Two observations struck us very forcibly: (1) The infrequency with which influenza is followed by tuberculosis; (2) the infrequency of previous gastric symptoms. Recently Galbraith (Practitioner, June, 1907) has stated that in 83 per cent of 150 cases dyspepsia was present as a very early symptom. Possibly the low order of intelligence of the majority of our patients accounts to some extent for the small number of those who confessed to stomach symptoms. Then, too, so many were seen several months after the initial symptoms that they may have forgotten trivial things such as mild stomach troubles.

Cough, as the table shows, was the most frequent initial symptom. As these cases were all questioned by one individual and history forms were used, we believe that these figures are substantially correct. A neglected, apparently ordinary, cough was the starting point in 112 cases. The 26 cases who gave a history of hemorrhage as the initial symptom were sure that up to the time of the hemorrhage they were perfectly

well and strong. It is remarkable for how long a period hemorrhages may occur. One patient stated that for eighteen years she had had from time to time profuse hemorrhages. In several cases the initial hemorrhage of a cupful to a "pint," occurred ten years previously. They had taken medicine, kept on with their work, and only for the few weeks or months previous to the clinic visit had they noticed any change in their health.

The initial lesion was in the right lung in the majority of cases. By "right upper" and "left upper" are meant the upper part of the lungs from about the third rib in front and from the middle of the scapula behind. That takes in portions of both the upper and lower lobes. It seems to me difficult at times to state positively, when a large portion of one lung is diseased, whether or not the harsh respiratory murmur heard over the other lung is entirely due to compensatory emphysema or due to tuberculous infiltration. Both lungs were involved in 13 cases, and in 5 cases an apex and an upper were involved.

We were surprised to find among complications only three cases of pneumothorax. It is likely that some might have been overlooked.

The best index of the hopelessness of the work, as far as the treatment is concerned, is shown by the stage of the disease when the cases presented themselves for examination. The classification used is the one adopted by the National Association for the Study and Prevention of Tuberculosis. The apparently acute cases are really advanced, but they have been here separately classified. It is seen that only 12 of the 185 cases were classed as incipient. Ninety-three were advanced, 74 were moderately advanced (possibly some of these could have been classed as third stage cases). A very few of these were able to follow instructions under the watchful care of a nurse and they showed marked improvement. It was sufficient to assure us that, had we the facilities for caring for our patients, many might have been markedly benefited and possibly a few might have recovered so that they could have gone to work again.

Very interesting is the history of exposure to the disease. In 42 cases there was a history of definite exposure to a member of the family. In some cases the exposure was as long ago as forty years. Whether the bacilli can live in the tissues in a viable but dormant state for that length of time is a question that it is difficult to answer positively, as direct proof would be impossible to obtain. Personally I believe that such is possible. Certainly the bacilli can remain for five, ten or fifteen years in a resting condition, why not forty? In 20 cases there was exposure that was conjugal, through a friend, or from some one associated at work. In many cases, particularly the lodging house habitués, although no definite history of exposure could be obtained, one felt that the chances of acquiring the disease by living and sleeping in such places were excellent. A number of men admitted that in the room where they slept there were from six to eighty men, the ventilation was almost nil, and there were, or had been, men with heavy coughs who spat up quantities of sputa. Those with advanced tuberculosis who were seen in the

clinic, stated that they were in the habit of spreading a newspaper on the floor to receive the spit. Surely there is no doubt that such houses and rooms are hotbeds of infection and many cases are contracted in them.

This brief résumé of the work of the first year leaves us in a very unsatisfied frame of mind. It is of no value to recite the difficulties under which the work has had to be done. Suffice it to say that one person has done everything. There is no nurse, no clerk, no assistant attached to the clinic. We hope soon to have some who will keep the records and do some of the routine work.

In this campaign there is so much that is needed, there is so much to be done, that it seems at times almost a hopeless task.

There must be education, education and still more education before we can hope to grapple successfully with this huge problem. In no two communities will the same plan of work be the most successful. We, in the middle West, have to contend with conditions so different from those in the eastern cities that our whole campaign must be newly planned. As yet we have scarcely won our spurs in the fight, so new to this part of the country is a really active antituberculosis campaign.

In an address not long before his death, Sir William Broadbent said: "In dealing with consumption there are two distinct objects to be kept in view—the relief and cure of those already afflicted, and the protection of the community generally from the disease. * * * Of the two objects, the treatment of early cases and the isolation of advanced cases, by far the most important in the interests of the public is the latter. The provision for these two objects again falls on different shoulders. Sanatoriums for the treatment of presumably curable cases are a legitimate object for charitable support. Hospitals for isolation purposes ought to be provided for by the health authorities. It is as much the duty of the bodies charged with the responsibility of guarding the public health to prevent the dissemination of tuberculosis in the air as to prevent the contamination of drinking water by the typhoid bacilli."

3806 Washington Boulevard.

NOTE.—The writer regrets that he will not be able to report next year. Since this paper was written he has been forced to resign his position in the Health Department. Many of the suggestions that he repeatedly urged on the Department he hopes to see carried out during the coming year under the new regime. It is confidently expected that our local society will have its own dispensary. This will materially aid the work.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF
JESSE S. MYER, M. D.

DIET IN TUBERCULOSIS.—White (*New York Med. Jl.*, Nov. 2, 1907).—With the constant advancement that is being made in dietetics, White believes that much can be done in the care of tuberculous patients. It must be approached from these standpoints by the profession. The first, attempting to determine the truth of specific action of any food stuffs in destroying the bacillus tuberculosis. Under this class usually come the use of cod liver oil, forced feeding of meat or vegetable diet—all of which seem to justify the conclusion, after careful study, that no specific articles of diet or methods of feeding have a specific action in the treatment. That nutrition should be improved and judiciously pushed to the utmost limitations seems to the writer a foredrawn conclusion. This is especially true since all patients with tuberculosis have impaired digestion and malnutrition, a condition which has probably existed some time before the bacillus tuberculosis could have gained a foothold in the system. A restricted diet becomes necessary for a time in these cases and has the function of not only furnishing rest for the digestive tract, but at the same time facilitates the elimination of toxins. The amount of fever, muscular exercise, mental conditions and other factors must have a bearing on the diet. Lastly the diet should be such as to reduce the autointoxication to a minimum and be free from the bacillus tuberculosis. These ends may be accomplished by keeping the alimentary tract in as healthy a condition as possible, and by observing the greatest vigilance in the choice of food ingested, milk deserving special care.

HEMORRHAGES IN BRIGHT'S DISEASE.—Riesmann (*Am. Jl. of the Med. Scs.*, Nov. 1907).—After a careful review of the literature and a report of several cases, the writer concludes that Bright's disease causes hemorrhages from the nose, uterus, lungs and stomach; hemorrhage into the brain, eye and ear; and also a more or less well marked hemorrhagic diathesis. The diathesis is characterized by bleeding into the skin and mucous membranes.

The true cause of this hemorrhagic diathesis is unknown; but it is probably a toxin analogous to the hemorrhagius of snake venom. All other types of bleeding are due to arterial disease and hypertension. The prognosis in all cases of nephritic hemorrhage is unfavorable and generally hopeless when the hemorrhagic diathesis exists.

TRUE INTESTINAL DYSPEPSIA.—Einhorn (*Am. Jl. of the Med. Scs.*, Nov., 1907).—By the term "intestinal dyspepsia" the writer understands conditions in which the digestive function of the intestinal tract is disturbed. The test which has been employed to recognize this condition was introduced by Schmidt. Einhorn finds that the Schmidt test-diet presents some difficulties in that it is often necessary to wait several days for the stool from the test-diet. For this reason he has employed the bead test with great satisfaction. In the use of this test, however, one must not infer that because he finds a substance in the beads undigested,

that there is no digestion whatsoever, as such substances may occur in the bowel, but rather that there is a considerable diminution.

Einhorn distinguishes two large groups of intestinal dyspepsia, namely, digestive disturbances which concern all those classes of food stuff, and disturbances affecting only certain classes. A number of cases of each group are detailed. Complete intestinal dyspepsia may exist for a long time without necessarily endangering the life of the patient.

In the second class, disturbances in the carbohydrate digestion seem to be most frequent, and those of meat digestion rarest. Therapeutically the author suggests in the complete intestinal digestion a liquid or semi-solid diet and the administration of pancreon and similar medicaments. In the partial type, the amount of that variety of food which is not digested should be limited. Tatadiastose in five grain doses is valuable in the amylaceous dyspepsia while pancreon gives good results in the proteid and fat digestion.

THE OPSONIC INDEX IN Erysipelas and its Relation to Treatment of Inoculation of Killed Streptococci.—Schorer (*Am. Jl. of the Med. Scs.*, Nov., 1907).—This is a report of the treatment of patients suffering with erysipelas at the Bellevue Hospital, from January 1st to February 15th, 1907. Altogether the opsonic index was studied in 36 patients and 37 patients received one or more injections of killed streptococci. The organisms used for the determination of the index and for injection were a mixture of four cultures of streptococci isolated from four patients suffering with erysipelas. It was found that not much reliance could be placed in the determination of the opsonic index. The method usually employed and recommended by Wright is not sufficiently accurate. The great variation of phagocytic power, when normal serum is used, makes the determination of the opsonic index of a single serum of little value. To obviate the individual variation, pooled (mixtures of several) normal sera and composite charts of comparable cases were employed when possible. It was found that in patients not receiving injections of killed streptococci the average maximum index was reached in the third day and then fell again. Injections of 25 million killed cocci causes an increase in index on the following day, while larger doses give the rise later and may first cause a fall of the index. In individual cases there is no constant change of index corresponding to relapse, migration, desquamation or recovery. Injections of killed erysipelas streptococci warrant no conclusion as regards temperature and delirium.

Recurrence and migration are not prevented by vaccines, but the average duration of the disease in patients receiving injections of killed streptococci is 6.8 days, as compared with 9.4 days when treated with usual remedies for a similar series treated in 1905. It is indicated, accordingly, that the vaccine injections may be of some value in erysipelas.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF
CARL FISCH, M. D.

COMPARATIVE INVESTIGATIONS ABOUT THE SIGNIFICANCE OF THE RESPIRATORY ORGANS AND OF THE DIGESTIVE TRACT FOR INFECTION WITH TUBERCULOSIS (Experiments on Guinea Pigs).—R. Pfeiffer and E.

Friedberger (*Deutsch. med. Woch.*, 1907, No. 39, P. 1577).—It is surprising to observe the contradiction between the vast bulk of experimental work done on the intestinal origin of pulmonary tuberculosis, after Behring's pronouncements some years ago, and the experience that pathological observations in human tuberculosis have yielded; the first resulted in giving up the source by inhalation, the other confirmed it. This difference in opinions seems to have passed unnoticed, and even in authoritative circles, like the last Congress in Paris, the tendency has predominated to assume a primary entrance of tubercle bacilli through the digestive tract as the main source of phthisis. Are clinical and pathologic findings unreliable? A search for the explanation of this contradiction has not been made for reasons unknown, or because of prejudice. Men with level heads have been warning against this change of opinion, without giving conclusive evidence of an experimental character. The fundamental investigations of Pfeiffer and Friedberger have thrown a light on the cause of this contradiction which illuminates the situation and puts the inhalation theory in its old place. Stimulated by the valuable work of Fluegge, which was absolutely confirmed by Findel, establishing the fact that under natural conditions the tuberculosis infection occurs through a limited number of tubercle bacilli; that under natural conditions, such a vast number is never introduced as is used in all experiments so far made, except in those inhalation tests made by Cornet; and that comparisons between infections caused by these vast masses of tubercle bacilli and those occurring under the ordinary conditions of life are entirely out of the question. In guinea pigs a number of bacilli, less than 400, will not cause tuberculosis, while a larger number produces it. The establishment of this fact shows the relatively small quantity necessary to infect a human being, although of course exact figures cannot be given. The guinea pig, however, is the most susceptible mammal known to us. Acting on this new addition to our knowledge, the authors imitated the human infection in an original and exceedingly logical way in exposing guinea pigs to the spray of a bacillary emulsion containing not more than 35,000 bacilli in one cc. The amount of the emulsion used was 0.1 cc. and the spraying continued for ten minutes. It was not done in a closed receptacle, but in the open and under different weather conditions. The distance of the face of the animal (only that part was exposed) from the nozzle of the spray was 15-20 c. The computation is that at the best the guinea pigs would inhale only a part of the 3,000 or 4,000 bacilli, so that by the single one only a small number could be inhaled. At the same time other animals were injected through the stomach tube with 9 cc. of the emulsion containing 35,000 bacilli in 1 cc.

The result of the first series is, shortly, this; of the 29 animals, after 50 days, 22 showed pulmonary tuberculosis. The tubercles were isolated, very large and mostly caseous. In almost all of them the bronchial glands were greatly enlarged and caseous. Only once an isolated tuberculosis of the bronchial glands with the lungs intact was seen. In 15 cases a dissemination of the process had taken place and hyaline miliary tubercles were found in the spleen and liver. In not a single case could there be discovered a disease of the mesenteric glands. The autopsy findings demonstrated conclusively that the dispersed bacilli had been inhaled with the inspired air and had passed directly into the lungs. In the animals fed with 9 cc. of the emulsion about three millions of bacilli were ingested, a quantity at least one thousand times greater than the quantity taken by inhalation. Twenty-eight animals were treated. After fifty days, four of these showed pulmonary tuberculosis, the character of the lesion in

the lungs in three of them was such that simultaneous respiratory and intestinal infection must be assumed. In only one case were the pulmonary tubercles miliary and hyaline; this was the only one in which the intestinal source of the lung lesions could be established. Excluding three cases which died from intercurrent diseases a short time after the ingestion of the virus, 21 animals remained which appeared absolutely intact and were perfectly free from tuberculosis. The conclusions to be drawn from these investigations are so obvious that every reader will make them. Pfeiffer's publication is the most important contribution to our knowledge of tuberculosis that has been offered since the last lecture delivered by Koch in England. The close relation of the results obtained by Pfeiffer with the statements made by Koch concerning the remoteness of the danger to man from bovine bacilli finds a beautiful, lucid and authoritative confirmation in Pfeiffer's and Friedberger's work. The human bacillus is the object against which we must fight, not the bovine.

ABOUT THE PRESENCE OF SPIROCHAETE IN PSEUDOLEUKEMIC HYPERPLASIA OF LYMPHATIC GLANDS.—Proescher and White (*Muench. Med. Woch.*, 1907, No. 38.)

SPIROCHAETES IN ACUTE LYMPHATIC LEUKAEMIA AND IN CHRONIC BENIGN LYMPHOMATOSIS (Hodgkin's Disease).—Proescher and White (*Jl. Amer. Med. Assn.*, 1907, Sept. 28. See also *Journ. Am. Med. Assn.*, Aug. 31, 1907.)

The three communications by Proescher and White have followed each other in quick succession. They concern the finding of a spirochaete in tissue of several lymphatic processes, cases of Hodgkin's disease and in acute lymphatic leukaemia. While in the first two cases of Hodgkin's disease the material was fixed in formalin, the two last ones, one of Hodgkin's and one of acute lymphatic leukaemia, could be investigated only during life by puncturing the glands. In the two first cases the Levaditi method and the staining with Giemsa solution showed the presence of numerous spirochaetes in the hyperplastic glands. While at first the character of these spirochaetes was taken as similar to that of spir. pallida, the material from the third and fourth cases showed them to be 20 m. long with wide turns and pointed ends. This would at once exclude the pallida. The clinical character of a number of lymphatic hyperplasias has for a long time suggested an infectious origin. All attempts to find a causative agent have been fruitless, and with our late experience in the case of syphilis the method used by Schaudinn and Levaditi were applied by the authors to a similar investigation of general lymphatic hyperplasias. That in four cases, widely different in their clinical and even pathologic character, the same organism was found in the same relation to the pathologic tissue, as the organism of lues to luetic lesions, is a point that excites immense interest, the more so as spirochaetic diseases in animals have become more and more numerous in the literature of the last year. So-called lymphosarcoma and lymphatic and other leukaemias, have been the object of speculation of many investigators. Many of them were compelled by their studies to assume a parasitic etiology. Loewit has spent a part of his life in the characterization of a parasite residing in the leucocytes and their nuclei of leukaemic blood. His interpretations have met with universal contradiction. That the pathologic insight into the nature of leukaemia is distinctly none is shown by the yearly changing interpretation of the character of the lesions, some considering it as the expression of a malignant metastatic process starting from the hematopoietic tissues,

others only in an inexplicable change of the reproductive quality of the normal function of these tissues. It is yet too early, after these few observations of the authors, to accept them as explanatory of obscure lymphatic hyperplasias; still, their occurrence in conditions etiologically as yet absolutely obscure, but obtaining only for a definite type of tissue, is suggestive and calls for at least a wide extension of the observations to a great number of such conditions. That the present classification of lymphatic hyperplasias is not essentially the expression of the genetic independence of the different ones from each other, is shown by the clear presentation of this question in the paper by McCallum, reviewed below.

ON THE PATHOLOGICAL ANATOMY OF LYMPHOSARCOMA AND ITS STATUS WITH RELATION TO HODGKIN'S DISEASE.—McCallum (*Bull. Johns Hopkins Hospital*, September, 1907).—This paper is so full of details and special points that it is impossible to review it adequately without republishing the whole paper. Not only the statement of the relation of lymphosarcoma to the changes in Hodgkin's disease is in the foreground of his discussion, but the evidence resulting from his study of the pathology of lymphatic and other hematopoietic tissues make it possible to arrive at clear and definite conceptions. He has made a splendid beginning, which may be accepted as an indication of the direction of future work. Only one point may be reproduced here, the classification that, in his opinion, for the present, is the best, and the one that allows of a universal definite understanding of the character of pathologic changes dealt with in the single case. It is a somewhat modified copy of the classification by Sternberg that can be found in Lubarsch and Ostertag's *Ergebnisse*.

A. Primary diseases of the lymphatic and hematopoietic apparatus. Local limited homologous (hyperplastic) tissue growth.

a. With discharge of the cellular elements into the blood and homologous change of the tissue of the lymphatic and hematopoietic apparatus.

1. Lymphatic apparatus—lymphocytes in the blood. Lymphocytes—Leukaemia.

2. Myeloid tissue—Myelocytes in blood. Mixed-celled leukaemia.

c. With slight or no discharge of cellular elements into the blood.

3. Of all lymphatic tissue in a diffuse way. Pseudoleukaemia.

4. Of the lymphatic tissue of the bone marrow in the form of a tumor—Myeloid myeloma.

B. Atypical growths invading the neighborhood with heterotypic new growths.

a. With discharge of cellular elements into the blood.

6. Of the lymphatic tissue (discharge of ungranulated pathological cells). Leucosarcomatosis or chloro-leucosarcomatosis.

7. Of myeloid tissue (discharge of granular pathologic cells). Chloro-myelosarcomatosis.

b. Without discharge of cellular elements into the blood.

8. Of the lymphatic tissue. Lympho-sarcomatosis.

UEBER DIE CULTUR DER GONOCOCCEN.—Nakas Abe (*Centralbl. f. Bacteriol.*, Orig. Vol. 44, H. 7).—A reliable and easily prepared medium for the cultivation of the gonococcus has been worked out by Nakas Abe. It is preferable to the media of Wassermann, Thalmann, etc., and does away with the uncertainty of success in preparing the media. The

growth of gonococci on Abe's medium is rapid, and the life of the cultures is more prolonged than on other media.

500 g. of fat-free meat are ground or hashed and mixed with 1000 g. of water. After 18 to 24 hours in the ice box the mixture is filtered through paper and then through a Chamberland bougie into sterile containers. This fluid can be kept for a moderate time in good condition. For use it can be mixed with fluid or solid pepton media in the proportion of 5 of the latter and 1 to 2 (better 2) of the former. The liquefied agar must be brought down to a temperature not higher than 45° to 50° C. and the meat extract should have the same temperature. The preparation is easily made and the material obtainable at any time and everywhere. The reviewer can give testimony to the facility with which gonococci can be grown on this medium.

DIAGNOSIS.

IN CHARGE OF

ALBERT E. TAUSSIG, M. D.

THE PRACTICAL VALUE OF THE EXAMINATION FOR THE SPIROCHAETE PALLIDA.—Atning and Klein (*Deutsch. med. Wochenschr.*, No. 37, 1907).—Improved methods make the staining of the spirochaete pallida in smears comparatively simple so that it can be done as a routine measure for diagnosis. The writers recommend the Preiss modification of Giemsa's stain which in their hands has proven very satisfactory. In 112 cases of chancre on the male genitals the spirochaete was found in all but 4 cases and in 2 of the latter the ulcers had been treated locally with mercury. In 14 chancres on the female genitals the microorganism was found in every case. Syphilitic plaques and patches were examined for the spirochaete 179 times with only 10 failures, while in 17 cases of congenital syphilis the microorganism was found every time. It was found 7 times out of 32 in cases that were clinically uncertain and each time the subsequent course of the disease confirmed the microscopic findings. In 93 cases of soft chancre the spirochaete was found only twice and in these there was apparently a double infection. In the other 91 cases a prolonged search failed to demonstrate the presence of the microorganism. The results are quite as good as those obtained in the routine search for tubercle bacilli in the sputum and indicate that the demonstration of the spirochaete pallida in scrapings from suspected syphilitic lesions has a distinct practical value for diagnosis.

SCARLATINA AND DUKE'S DISEASE.—Cotton (*Jl. A. M. A.*, Oct. 26, 1907).—To the three exanthems, scarlet fever, measles and German measles, a fourth must be added, namely Duke's disease. It is apparently less contagious than measles, probably as much so as scarlatina, with a period of transmissibility of from one to three weeks. Prodromata may be wanting so that the first manifestation of the disease is the rash. Sometimes, however, a mild continuous fever precedes the rash, and occasionally there are catarrhal affections of the respiratory tract suggesting measles. The eruption almost invariably appears first on the face, rarely on the neck, and spreads rapidly downward, involving the trunk and portions of the extremities in a few hours. It does not seek the flexures and is usually pronounced over areas irritated by clothing or decubital pressure. Occasionally fine points first appear which quickly blend in a

general hyperæmia, with rarely small patches of normal skin sharply defined by irregular margins. The marked oronasal pallor of scarlet fever is not in evidence. The color of the rash is very suggestive of scarlatina, and fades rapidly after two or three days without stain, such as is observed in measles and often in rubella. Itching is absent, nor does the skin feel hot to the touch, as in scarlet fever. Desquamation usually, but not always, follows the disappearance of the exanthem. Its character is fine and branny, rather than in shreds and patches, as in scarlet fever. The febrile movement, usually marked, subsides rapidly with the eruption, rarely exceeding two or three days. The tongue, except for occasional coating, is negative, as also is the throat, save occasionally for a mild hyperæmia; the pulse shows no acceleration out of proportion to the febrile movement. Usually the postcervical and occipital lymph nodes are palpable early in the attack, but frequently show no swelling whatever. No massive enlargements nor softening have been observed in uncomplicated cases. As a rule, no sequelæ occur, and rarely complications, the course being usually mild and uneventful. It is distinguished from scarlet fever by: (1) Long period of incubation; (2) absence of initial vomiting; (3) moderate fever of brief duration; (4) normal ratio of pulse to temperature; (5) absence of characteristic scarlatinal tongue; (6) the absence of desquamation or, if present, its fine character; (7) the freedom from sequelæ; (8) usually the absence of leucocytosis. When one or more cases of apparent mild scarlet fever occur in a family giving a clear history of former attacks of scarlet fever, Duke's disease may be suspected.

IRREGULARITY OF THE PULSE IN DIPHTHERIA.—Peters (*Lancet*, Sept. 14, 1907).—The writer holds that little importance should be attached to the irregular pulse often observed in children during diphtheria. Children during the early years of life, especially the fourth and fifth years, commonly exhibit this symptom in any febrile disturbance and often in apparent health. If actual myocarditis is present an irregular pulse is of course of the gravest significance, but the irregularity itself does not justify the assumption of a degenerated heart muscle. In most diphtheria cases with cardiac irregularity, the latter continues for some time after apparent recovery and the children are kept in bed week after week when they would do much better out of doors, especially in view of the resulting anemia. On the other hand a true myocarditis, if overlooked, may be a serious matter. A careful examination of the circulatory system as a whole is essential.

THERAPEUTICS.

IN CHARGE OF
WILLIAM ENGELBACH, M. D.

THERAPEUTICS OF FIBROLYSIN.—Pope (*British Medical Journal*, June 22d, 1907).—Pope recorded a case of locomotor ataxia treated by intramuscular injections of fibrolysin, which was followed by much improvement and a return of the knee jerks. The patient was 32 years old, and, on coming under treatment, he was a very typical case. He presented areas of paraesthesia and impairment of special senses, was very ataxic, had difficulty in micturition, and some hemiatrophy of facial and lingual muscles. He had Argyll-Robertson pupils, absence of knee jerks, and

Rombergism. Treatment was begun on January 2d, 1907, by an intramuscular injection of 2.3 c.cm. of fibrolysin. This was repeated on alternate days for nineteen times; at the end of which period there was improvement in standing and walking, but much inco-ordination persisted. After two more injections the knee jerks had returned. When twenty-four injections had been given in all, the treatment ceased; but two months later the patient was still able to walk about with the aid of two sticks, the knee jerks were retained, and there were no shooting pains—but the pupil reaction was unchanged. He recommended a further trial of this remedy in tabes. Further experiences with the same drug are recorded by Hastings. Some months after an attack of typhoid fever in 1889, a female, aged 46, began to suffer from an indurated patch on the calf of her left leg. This ulcerated and healed, but numerous other ulcers followed, with increasing induration. The process lasted for years, so that in November, 1906, her condition was as follows: The lower half of her leg was firm, smooth, scarred and contracted. In the center of the indurated area posteriorly there was an ulcer of the size of a crown piece. A smaller ulcer was situated below and in front of it. On the anterior and inner aspect of the limb there was a hard fibrous prominence, about the size of half a cherry. A half-ampulla of fibrolysin was injected on February 12th, as treatment had not effected any improvement. This injection was repeated on February 15th, and for the next five weeks one ampulla was injected twice weekly into the limb, in various situations. The injections were followed by marked local reaction. After the second, all pain ceased, and the leg seemed softer than before; the ulcers also looked healthier. The nodule in front of the leg diminished in size. As the injections were persisted in, the smaller ulcer entirely healed; the larger one became as small as a shilling, and the fibrous nodule practically disappeared. The greatest relief experienced by the patient was the cessation of the pain. Hastings states that thiosinamine (fibrolysin) succeeds best when the fibrosis has existed for some considerable time. In subacute or barely completed pathological conditions, it is contra-indicated, as it is liable to reawaken the inflammatory process. The theory of its action is that its injection is followed by a hyper-leucocytosis, and it is thought that during this period a destruction and absorption of nodules and of cicatricial tissue may occur. This writer also refers to a case of keloid in which he employed thiosinamine injections, but the only effect was a temporary softening of the edges of the keloid patch. On the other hand, he states that the milder varieties of Dupuytren's contraction benefit from the treatment, as also fibrous stenosis of the oesophagus and pylorus, but it is of little value in urethral strictures.

EXPERIMENTAL BASIS OF IRON THERAPY.—Laspeyres (*Medizinische Klinik*, May 26, 1907; Ref. *Progress of Medicine*, August, 1907) reviews the excellent work that has been done in studying the behavior of iron in the animal body. Beginning with the results in plants, by first withholding iron from their nourishment, with the production of pale foliage, and the subsequent addition of iron with recovery of the normal green color, he notes that similar good results in chlorosis, through the use of inorganic salts of iron, are attested by numberless practitioners. In chlorosis, however, there is not simply a deficiency of iron in the food, as in the plant experiments; for with most chlorotic girls the food is as rich in iron as usual, nevertheless the administration of inorganic iron is followed by prompt increase in color of the blood and recovery. Kobert having shown that iron injected subcutaneously or intravenously caused acute poisoning, Bunge

was led in 1884 to the opinion that medicinal inorganic iron is not absorbed from the digestive canal, but that its action is protective to the food iron, in that by uniting with hydrogen sulphid in the intestine it saves the food iron from similar combination and leaves it free for absorption. The latter view has been dispelled by the fact that hydrogen sulphid generally does not occur in the small intestine, but is first formed in the large bowel. It is noted that the amount of iron differs much in the common foods; green vegetables, meat and yolk of eggs contain much, while milk and rice are much poorer. The striking discrepancy between the needs of the growing young animal and the deficient amount of iron in the milk was shown by Bunge to be compensated by the fact that mammals (dogs, cats and rabbits) receive at birth a large amount of iron in their organism, which, being gradually used during lactation, reaches its minimum with the close of that period. The interesting investigations by Krasnororsky in the Czerny Kinderklinik seem to show that, in respect to human milk, the small amount of iron is compensated for by its easy assimilability, 80 per cent being absorbed and 75 per cent retained. Goat's milk is inferior in this respect. The iron compounds of spinach and yolk of egg do not differ much from each other in their absorption and retention, but are considerably below human milk in this regard. It is impracticable to estimate how much iron is absorbed, by comparing the amount taken with that found in the urine and feces, as the latter may contain unabsorbed iron, while the urine contains only traces of the metal in organic combination not responding to the ordinary tests. It was shown by Gottlieb, in 1891, that iron-sodium oxytartrate injected subcutaneously, in dogs upon a diet poor in iron, was mostly eliminated with the feces, deposition of iron having occurred in the liver with gradual elimination during nearly three weeks after injection. The small intestine contained much less than the large, which indicates that the latter is the chief organ of elimination for iron, which the observations of Fritz Voit upon a dog with isolated small intestine also confirm. Regarding further the question of absorption of iron given by the stomach, the evidence is given of Honigmann's observations on a patient with a fistula in the lower part of the ileum, in whom, of 0.4166 gm. of iron contained in 20 cc. of a solution of ferrum citricum oxyd., 81.33 per cent had disappeared down to the point of the fistula. During the past ten years further study has been aided by microchemical tests of iron in the tissues, by means of ammonium sulphid or potassium ferrocyanid with hydrochloric acid. These reagents detect inorganic iron compounds and the salt-like combinations of iron with albumin. Hemoglobin and hematin generally do not respond, while hematogen and fermentation do so only after prolonged action; so that a failure of the reaction does not permit the conclusion that all forms of iron are absent. Employing this method Hochhaus and Quincke, experimenting with mice, ascertained the presence of iron in the epithelium of the duodenum up to two days after administration. The reaction failed in the small intestine, but was constantly present in the upper part of the large, and here almost exclusively in the submucosa. The latter finding obtains also in normal mice, but less marked than when iron is given. They concluded that a soluble iron albuminate penetrates the epithelial cells of the duodenum exclusively and is here at once precipitated, to extend later into the deeper tissues and to the mesenteric glands. The findings in the large amounts, and Cloetta by employing an iron-nuclein compound, in epithelium, and especially as continued feeding with iron increases the reaction, as also after subcutaneous administration the amount of iron in

the large intestine increases. The conclusion that iron is absorbed from the duodenum exclusively may be questioned, since Macallum, by giving large amounts and Cloetta, by employing an iron-nuclein compound, in which the iron seems to be more firmly combined and more resistant to the solvent influence of the duodenum, found the iron reaction to occur also in the epithelium of the small intestine, while Tartakowski showed it also in the epithelium of the stomach. Abderhalden extended the experiments of Hochhaus and Quincke, by comparing animals fed with a diet poor in iron with others in which iron preparations were added to the same diet, and with animals upon a normal diet. He found the iron test negative in the animals upon the diet poor in iron, while it showed positive as soon as either organic or inorganic iron preparations were added, as also in those normally fed. He obtained the iron reaction in the duodenum, in the solitary glands and in Peyer's patches of the small intestine, the cecum, the colon, the mesenteric glands, slightly in the kidneys, markedly in the liver, spleen and bone marrow. Accordingly, the absorption of inorganic forms of iron must be admitted; and it is of interest to note that the iron of the normal diet takes the same route of absorption, is deposited in the same organs, is eliminated at the same place, and is recognizable by the same test, as are the inorganic forms. Both are deposited, as loosely combined iron, chiefly in spleen and liver, and are changed as needed into the firm combinations of blood iron or tissue iron. The above results fail to solve the question of the nature of chlorosis or the action of iron in that condition, which does not depend upon lack of iron in the diet. The most commonly accepted theory of Von Noorden, that chlorosis is caused by a functional weakness of the blood-forming organs, probably due to failure of some internal secretion that normally stimulates them, gives basis for his explanation of the action of medicinal iron, which he believes to exercise a strong stimulation upon the blood-forming cells of the bone marrow, thereby inciting new formation of hemoglobin and also red blood cells. Abderhalden raises the question whether the nature of chlorosis does not consist in the cells having lost in part, their capability of splitting iron off from its complex organic combinations in the food, or of bringing it into proper form for forming hematin. This would permit the conclusion that medicinal forms provide the system with iron in a form more readily absorbed and more easily utilized in hemoglobin formation. For the present our view of the disease must rest upon theory; but with the experimental facts remains the fact of success in the iron therapy of chlorosis. And the author believes that we have no occasion to depart from the teaching of Niemeyer in favor of the use of inorganic iron salts. He deprecates the many commercial preparations and welcomes the increasing favor shown toward the use of reduced iron, and the carbonate as given in the time-honored Bland's pill.

SURGERY.

IN CHARGE OF
MALVERN B. CLOPTON, M. D.

RECENT RESEARCH IN CANCER.—Copeman (*Practitioner*, Aug., 1907.)—It is believed that cancer is not, in the ordinary sense, an infection, there being no evidence that its onset and continued growth is due to any microorganism. That cancer constitutes the local manifestation of perverted metabolism is indicated by the failure of the normal HCl secreting

function of the stomach, even when the growths are situated away from the viscera, and to this absence of HCl may be attributed the profound nutritional disturbances or cachexia, as with HCl absent the bile and succus entericus are unable to perform their share of digestion. In some instances temporary amelioration of symptoms, with or without retardation of growth, has been obtained by certain forms of treatment. With the object of lowering the increased alkalinity of the blood and bringing about an increased acid secretion of the stomach, Metchnikoff's lactic acid milk, the living acid-producing bacilli in which are capable of gradually supplanting the pre-existing bacterial flora of the intestine, reduces the alkalinity of the feces, which gradually tend to become neutral or even faintly acid. This "bacterial junket" is highly nutritive and easily digested and may prove the only food capable of assimilation in advanced stomach cancer. The author believes that operative measures are the only ones at present to rely upon, but inasmuch as there is occasionally a spontaneous cure, there is reasonable hope that continued investigation and research may afford accurate knowledge of the conditions favorable to such spontaneous cures, and, further, that the indications thus afforded may eventuate in the discovery of a method specific for this disease.

SURGERY OF THE THORACIC DUCT.—De Forest (*Annals of Surgery*, Nov., 1907).—A case is reported which was operated for cervical adenitis of the right side, the dissection extending to within an inch above the clavicle. The wound was closed and the patient did well for four days when, on dressing the wound, the suture line was found "melted away." Two days later the edema of the adjacent parts led to an opening of the wound and a pint of thick, curdy material came away, and later chyle discharged, continuing abundantly for the next five days, the flow being so free as to require frequent changing of the dressings. There was no undue hunger, but the patient became weaker. On the eleventh day the flow had practically stopped, when the wound was tightly packed with iodoform gauze and from that time healing was rapid and convalescence uneventful.

In the literature thirty-one cases of injury to the duct are reported, and all but two recovered. The thoracic duct probably always has collateral branches which are able in case of accident to perform the function of the main duct. Sudden closure of the duct in man has had as its result only transitory disturbance of nutrition of the body. Chylorrhea occurring after a wound of the duct, must, if possible, be immediately controlled, and may be treated as a wounded blood vessel. Suture is the ideal method, if it is technically possible, but as the chyle does not coagulate, and perfect closure is usually impossible, ligature will be the next best method, and, if this is not available, suture of the tissues over the wounded vessel, application of clamps to the duct or, in emergency, or as a last resort, temponading should be applied.

A NEW OPERATION FOR FEMORAL HERNIA.—Moschowitz (*N. Y. State J. of Med.*, Oct., 1907).—Believing that most of the methods of operation for femoral hernia at times fall short of accomplishing a cure, the following operation is presented, which, while original with the author, corresponds with the Ruggi method for femoral combined with Bassini's method for inguinal hernia, and is also similar to a method described by Silver. The incision is made as for inguinal hernia above Poupart's ligament, but in certain cases is extended vertically down over the femoral sac; the aponeurosis of the external oblique and transversalis fascia is divided and the sac exposed at its neck beneath Poupart's. It is tied off at the

peritoneal cavity, which by this method is possible, but by most other methods cannot be done even when the strongest traction is used to draw the sac down. Closure of the internal femoral ring is done by passing a curved needle with chromic gut between Cowper's ligament and the periosteum of the pubic bone and drawing Poupart's ligament over the femoral ring, which can usually be done with two or three sutures; that most external goes near to the external iliac vein, the most internal sutures include Gimbernath's ligament. With the spermatic cord in place, four or five sutures unite the internal oblique and transversalis with Poupart's ligament, the cord emerging below. The external oblique is closed and then the skin. This is a preliminary report on the method, as only twenty-nine cases have been operated.

GENERAL PERITONITIS FOLLOWING APPENDICITIS.—Fowler (*N. Y. State J. of Med.*, Oct., 1907).—The report is based on 145 consecutive cases of diffuse peritonitis. Operation was not refused those almost moribund cases, for occasionally miraculous recoveries ensue. Six cases died in the course of the operation. Cure in those cases surviving the operation was 62 per cent. Twenty-eight cases died in the first twenty-four hours, 16 died in the second twenty-four hours. The incision was small, the appendix removed, after packing off with wet sponges wrung out of 1-3000 bichloride. The immediate neighborhood is flushed with a warm solution of equal parts of peroxide of hydrogen and bicarbonate of soda, followed by salt solution. In the first one hundred cases peroxide irrigation was used for pus collections in the pelvis, and elsewhere in the cavity, but in the last forty-five cases peroxide had not been used above the umbilicus except for separate collections of pus. The whole abdominal cavity was completely flushed with salt solution, introduced through a Chamberlain douche nozzle. The average time of operation was twenty minutes. Whenever necrotic abscess cavities existed these were drained with gauze wicks brought through the wound, in addition to whatever form of pelvic drain was used. In 116 cases glass or rubber tube drains with gauze wicks were introduced into the pelvis and this pelvic drain was made long enough to allow a separate bundle of gauze dressing to be attached to it, and allow the changing of these dressings independent of the dressing of the wound. Six cases were drained through the vagina. Three cases were closed without drainage and all recovered. Those cases which can be closed must have no necrotic areas, and there must be no blistering, desquamation, swelling or infiltration of the serosa. Directly after operation the patient is placed in the elevated head and trunk position; those with much shock cannot be raised as high as the others for the first few hours. Saline enemata of a pint or quart are given every three or four hours. The average stay in bed of cases recovering was twenty-two days.

FUNCTIONS OF THE PYLORUS AND STOMA AFTER GASTRO-ENTEROSTOMY.—Diggett and Maury (*An. of Surgery*, Oct., 1907).—These studies were on dogs. The pyloric and stoma functions were investigated from three standpoints: (1) By studying the course taken by solid particles tied to a string; (2) by feeding fat and studying the condition of the lacteals an hour later; (3) by performing gastroenterostomy near to the ileocecal valve and making observations upon the weight of the animal. In the only case mentioned in which the first experiment was successful the string emerged from the stoma, went up through the duodenum to the pylorus, which it passed through in the reverse direction

into the stomach, making the trip twice. Another dog who had worn the string for two days was given a large fat meal. The gastroenterostomy was near the ileocecal valve. The string had passed through the pylorus and well down into the small gut, nearly to the site of the gastroenterostomy. The lymphatics of the entire intestine were engorged up to the point where the meat was tied to the string, but not below this, although somewhat lower down in the small gut was the enterostomy. This was considered as showing that fats do not pass through the stoma. The experiments based on the weight of the dogs were not very successful.

ORTHOPEDIC SURGERY.

IN CHARGE OF
NATHANIEL ALLISON, M. D.

ON THE USE OF MASSAGE AND MOVEMENT IN THE TREATMENT OF FRACTURES.—Cathcart (*Glasgow Med. Jour.*, July, 1907).—The author directs attention to the massage and movement method of treating fractures, and shows how almost every fracture in the body can have this method applied to it with much benefit to the patient. He arrives at the following conclusions after a study of the literature and reviewing his personal experience: Absolute immobility of the broken ends of bone is not essential to bony union. The ribs unite in spite of the movements of respiration, and wide experience has shown that the slight amount of movement, necessarily involved in the daily massage of a fractured limb, and in the daily active and passive movements for a few minutes, at least, of the adjacent joints, seems to hasten rather than hinder the formation and the solidification of the callus. Extravasated blood in joints and among muscles and synovial sheaths leads to adhesions in its neighborhood, as if it were in itself a source of irritation, apart from the irritation due to bruising and laceration of these soft parts which accompanies fracture. Massage in the form of stroking and gentle kneading and with it occasional movements, are in several ways beneficial in the treatment of fracture. These measures not only aid the actual union of the bones, but help in the absorption of effused blood and serum, restrain if not prevent the formation of adhesions among the soft parts, and maintain the nutrition of the muscles. They, therefore, simultaneously hasten union and prepare the limb to return to functional use, almost as soon as the bones are united. Splints and other retentive apparatus, including extension, are required more to prevent mal-union than non-union, and hence are called for, especially where the weight of the limb or muscular action are likely to lead to bad position during the healing. Anyone sufficiently careful and gentle in handling an injured and delicate part can do this massage and manipulation, the objects of which are in recent fracture to diminish the swelling, allay muscular spasm and soothe pain, in later stages to stimulate circulation, disperse accumulations of blood and serum and maintain nutrition of muscles, nerves and soft parts. The patient must not be caused pain. The author then gives directions for the treatment of special fractures and calls attention to the fact that splints and extension must be employed meanwhile to supply the rest and fixation necessary. In certain fractures, as that of the clavicle, none of the appliances so far used prevent a certain amount of overriding; a good functional result is here obtained by the use of a

simple sling with the arm firmly supported at the side. Simplification of apparatus is a desirable thing, and the writer is of the opinion that much can be accomplished in this direction.

OPERATIVE TREATMENT OF FRACTURES INVOLVING THE ELBOW JOINT.—Flint (*Med. Record*, Sept. 21, 1907).—The article contains a report on ten cases of elbow joint fracture which were treated by operative methods. These fractures were of several varieties and the results obtained were encouraging. The writer says that operative interference should never be made when there is doubt as to its advisability; it is best to wait where there is any uncertainty. He describes in detail the operative procedure where the fracture is of the olecranon, the external or internal condyle, supra-condylar, comminuted and separation of the epiphyses. Conservatism gives the best results in childhood, and it is important to remember that the operation is only half the work; it must be supplemented with very careful and prolonged treatment, on which depends success or failure. Passive movements which should not be carried beyond the point of pain, massage and the early removal of fixing apparatus should be the aim of treatment after operation.

THE TREATMENT OF TUBERCULAR ABSCESSSES.—Young (*Amer. Jour. Ortho. Surg.*, July, 1907).—As a result of 26 reported examinations of tuberculous abscesses, Young has come to the following conclusions: (1) Tuberculous abscesses will frequently disappear under thorough protective treatment and will not require an incision. (2) Exploratory puncture of the joints should be made early, and of the abscess preceding any operation, for diagnostic purposes. (3) The method of operation should be decided on from the results of the laboratory examinations. (4) When the abscess is reported sterile it should be thoroughly incised, curetted and closed without drainage, under the most careful aseptic precautions. (5) When the abscess report shows large numbers of tubercle bacilli, the incision should be cauterized before the sac is incised, with thorough curettage, partial closure, and drainage for not over 48 hours, the strictest asepsis being maintained. (6) When the cultures show mixed infection, the abscesses should be incised, thoroughly curetted, washed with a formalin solution, partially closed aseptically, and drained for not over 48 hours. If the clinical symptoms and x ray show an accessible focus of disease this should be thoroughly removed at the same time the abscess is incised, by curettage, erosion, partial closure, and drainage for a short period. (7) Cultures should be taken from sinuses and if sterile the sinus should be treated by absolute, thorough and complete immobilization of the tuberculous area, with partial closure, and drainage for a short period. (8) If the cultures taken from the sinuses show tubercle bacilli the part should be thoroughly curetted, immobilized and treated with a saturated solution of methylene blue. (9) If the cultures show mixed infection of the sinuses they should be thoroughly curetted under strict aseptic precautions, the diseased part should be immobilized, and the general condition should be treated by serum therapy.

GENITO-URINARY SURGERY.

IN CHARGE OF
H. McC. JOHNSON.

SOME PROBLEMS IN THE TREATMENT OF GONORRHEAL SPERMOCYSTITIS.—Aronstam (*Internat. Jour. Surg.*, Aug., 1907).—The author

believes that spermocystitis is not so rare a complication of gonorrheal posterior urethritis as is estimated in some of our text-books, which give from 1.5 per cent to 3-5 per cent. He feels that if all cases of urethritis are examined with a view of ascertaining the condition of the vesicles, a much higher percentage of involvement will be found. The acute and subacute forms are discussed, and, referring to the treatment of the chronic form, the author reports excellent results from the use of full-sized medicated steel sounds, 26 to 30 French scale, passed three times weekly and left in position for 10 to 15 minutes, in conjunction with massage, suppositories, rectal irrigations, etc., as indicated. The medicinal lubricants used are preparations containing silver nitrate, peruvian balsam, ichthyol and adrenalin.

THE PATHOGENIC SIGNIFICANCE OF CHEYNE-STOKES RESPIRATION IN NEPHRITIDES.—Cumston (*Am. Jour. Urology*, Aug., 1907).—It may be assumed, with all safe probability, that Cheyne-Stokes respiration may arise during the progress of nephritis, although the renal permeability need not of necessity be disturbed, and, on the other hand, in other instances, where the impermeability is almost absolute, this phenomenon does not occur; while in all the cases personally observed, either lesions of generalized arteriosclerosis, or localized in the cerebral arteries, or cardiac lesions usually having an arterial origin, have always been noted. The author discusses Cheyne-Stokes respiration in its association with nephritides, with and without renal permeability, and cardiac and vascular lesions. To sum up, it may be said that between Cheyne-Stokes respiration and uremic poisoning there is only a relationship of coincidence; that between the former and lesions of the circulatory apparatus there is a necessary relationship, that which unites the effect with the cause. Periodical dyspnea is consequently the result of circulatory lesions, more particularly local disturbances in the brain; it indicates a condition of impediment of the respiratory centers, which react to the insufficient sanguineous excitation by a deviation of their functional activity. This pathogenic significance of periodical dyspnea during the progress of nephritides, a consequence of cerebral ischemia, is confirmed by the clinical observation of diseases other than the various nephritides, where this phenomenon is encountered; whether the periodical dyspnea appears in diseases of the heart, in diseases of the brain or meninges, in infections or intoxications, everywhere and in all we find this fundamental fact, namely, an insufficiency in the cerebral blood supply. The variable condition of renal permeability in cases presenting the Cheyne-Stokes phenomenon, the constant presence of arterial and cardioarterial lesions, the presence of this phenomenon in various affections, the variable action of digitalis and morphine, the absence of periodical dyspnea during the course of acute nephritides, appear to form a sufficient amount of proof allowing us to admit that the Cheyne-Stokes respiration is produced by factors other than renal toxemia alone, and that it is a symptom of cerebral arterial insufficiency and not of uremia. We have thus come to the conclusion that the Cheyne-Stokes respiration of nephritides, which, for many years, has been considered an important symptom of uremia, should no longer be regarded as such, and from a more general viewpoint we believe that the symptomatologic ensemble of uremic poisoning itself is not quite as vast as various writers would lead one to believe.

A NEW OPERATION FOR PENILE HYPOSPADIAS.—Bucknall (*The Lancet*, September 28, 1907).—The writer's operation consists in forming a urethra

from the skin of the penis and scrotum, and is performed as follows: The penis is drawn well up over the pubis and an incision is made on each side of the median line, one-eighth of an inch from and parallel to it, beginning on the glans and extending down on the under surface of the penis and on to the scrotum until the incisions on the scrotum, measured from the misplaced meatus, are equal in length to those on the penis, measured from the same point to their commencement on the glans. From the extremities of the two incisions others are made outward at right angles, each a quarter of an inch in length. These flaps are dissected up off the side of the penis and scrotum, respectively, and rolled outwards from the median line throughout their whole length. The flaps are held in the everted position and the penis flexed down on to the scrotum in the middle line about a transverse axis, passing through the misplaced meatus. The median strip of skin on the ventral aspect of the penis, and the raw areas flanking it, thus come to lie on the corresponding median strip and raw surfaces on the front of the scrotum. The penile strip of skin will form a roof for the new urethra and the scrotal strip will form its floor. The raw surfaces on each side, when properly sutured, will grow together, fixing the penis to the scrotum and closing in the lateral walls of the new urethral tube, so as to render it water-tight. In suturing the flaps the sutures are placed transversely and drawn taut over a small piece of rubber tubing, placed on either side to prevent puckering. In passing the needle on the inner side of the flaps, care must be taken not to enter the new urethra but still be close enough to exactly approximate its edges so as to prevent leakage. A small rubber catheter, with the eye cut off, is passed along the new urethra and pushed a short way down through the old meatus, so as to drain off the urine without soiling the new portion. The piece of catheter is removed on the fourth day, and the sutures on the fourteenth day, when the second operation may be performed, or postponed indefinitely, as desired. The second operation consists in dissecting up the penis and new urethra from the scrotum, lateral flaps derived from the scrotum being left on either side of the penis to close in the surface beneath it. Other flaps are formed on the scrotum by means of which the raw surface there is closed. If the lateral flanges used to unite the penis and scrotum project too freely, they can be trimmed off to improve the cosmetic result.

THE VALUE OF PALLIATIVE OPERATION FOR CANCER OF THE BLADDER.—Cabot (*Am. Jour. of Urology*, September, 1907).—The author, after a consideration of the subject and the report of several cases, submits the following conclusions: 1. That palliative operation is of value in cancer of the bladder. 2. That in properly selected cases, operation will prolong comfortable existence very materially. 3. That suprapubic drainage of the bladder will relieve the symptoms and promote the comfort of patients for whom nothing more radical can be done. 4. That hemorrhage should not be allowed to continue unchecked unless efficient examination has conclusively shown that the cause cannot be removed by operation.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF
HUGO EHRENFEST, M. D.

BLASTOMYCETES AND INFLAMMATIONS OF THE FEMALE GENITALIA.—Van der Velde (*Zentralbl. f. Gyn.*, No. 38, 1907).—This article contains

a summary of most interesting observations made by the author in a long and extended study of blastomycetes (saccharomycetes) in the etiology of various inflammatory processes occurring or originating in the female genitalia.

He succeeded in separating a number of species in pure culture. In experimenting on animals with such cultures he was able to establish, at least in some instances, as e. g., in cases of acute vulvitis and vaginitis, the etiologic relations existing between these fungi and the pathologic condition. Van der Velde demonstrated that the blastomycetes often accompany schizomycetes (bacteria), a mixed infection with the gonococcus apparently being very common, but in certain cases blastomycetes alone are found. He discovered them in cases of acute and also of chronic vulvitis and vaginitis, especially during pregnancy, in the mucoid contents of ovula Nabothi, in chronically inflamed, cystic Bartholinic glands, in two cases of old chronic sactosalpinx, in cystitis, etc. In cases of a somewhat prolonged labor they may quickly invade the amniotic fluid; in some cases of puerperal sepsis these blastomycetes were cultivated from blood obtained by venesection. In a case of multiple miliary abscesses in a uterus he detected the fungi in a pure culture in all the abscesses. Van der Velde saw a case of blastomycetes-peritonitis and he believes in a pure blastomycetes-sepsis.

The etiologic significance of the fungi for inflammatory processes, in which they are found, has been established by animal experimentation with a second and third generation cultivated on suitable media, as already mentioned, but also has been proved by a blastomycetic balanitis of husbands of women suffering from a blastomycetic vaginitis.

Of special interest are the author's investigations concerning the source of infection. It seems certain that the fungi are introduced by means of infected water used for douches. He repeatedly detected the same species of the fungus in the water used in a certain neighborhood. Boiling the water does not offer a safe protection on account of the fact that these blastomycetes may form very resistant spores. (It may be mentioned here that these investigations have been made in Holland, and it is possible that this infection, apparently so common in that country, for obvious reasons, may be rare or unknown in this country. Thus Van der Velde never found a case among women who used water of the Haarlem Water System both for bathing and douching.—EDITOR.)

The symptoms of the disease are those commonly seen in acute and chronic infections of the genitalia, most closely resembling those of a gonorrheal infection. The writer emphasizes the necessity of a more careful microscopic examination of suspicious secretions. This seems important, not only for the purpose of exact diagnosis, but also for therapeutic reasons. These blastomycetic infections remain practically uninfluenced by the common antiseptics, but seem to yield best to the use of solutions of salicylic acid preparations.

RESULTS OF PROLAPSE OPERATIONS.—Scharpenack (*Zentralbl. f. Gyn.*, 1907, No. 36).—The author reports the very satisfactory final results obtained with Schauta's operation for extreme cases of uterine prolapse. (The uterus is brought into the vagina through an opening made into the anterior vaginal fornix and fixed in this position. The tubes are resected, perineum repaired.) Of seventy-two patients operated in this manner fifty-seven later felt practically free of annoyance, four had some pain, and eleven did not feel better. Of forty-five patients who could be examined at a later date only in five the prolapse had returned, in twen-

ty-one the result was perfect. The writer is convinced that a thorough familiarity with the technique of the operation practically excludes the possibility of a recurrence after this operation.

PEDIATRICS.

IN CHARGE OF
ALFRED FRIEDLANDER, M. D.

BACTERIOLOGY OF WHOOPING-COUGH.—Albrecht reports the results of his investigations of this subject, to the Vienna Medical Society (*Rev. Mens. des. Mal. de L'Enf.*, September, 1907).—His work is based on a study of 200 autopsies on children dying of pneumonia, consequent on whooping-cough, and on the study of the expectoration in 70 cases of whooping-cough. In all of these cases there was constantly found the bacillus pertussis of Eppendorf. Albrecht thinks that this bacillus is not to be distinguished in any way, either morphologically or biologically, from the bacillus of influenza, and it would seem that we could say that the same bacillus can produce both diseases. Furthermore this bacillus seems to play an important role in measles, because Albrecht found this bacillus in 80 per cent in all fatal cases of measles. By inoculation of guinea pigs, Albrecht has succeeded in obtaining a serum which agglutinates this bacillus in a dilution of 1 to 400. The inoculated animals presented more or less marked myocardial lesions, and at times there were produced vegetations on the mitral valve.

CRANIOTABES.—Aucouturier (*Th. de Paris Arch. Med.*, September, 1907) says that softening and thinning of the cranial bones is most frequent between the 3rd and 8th months of life. It is not the cause of convulsions or spasms of the glottis, which may occur coincidentally with it. All of these symptoms have a common origin, namely: digestive disturbances; improper alimentation in early infancy. Craniotabes is a rachitic lesion, especially frequent where rickets supervenes early, but it is noteworthy that in many cases, craniotabes exists in well nourished infants, breast-fed, without any trace of rickets. In other words, while craniotabes is usually of rachitic origin, it is not invariably so. According to the author, craniotabes is frequently seen in cases of hereditary syphilis, but the syphilis is not its direct cause. Syphilis acts on the state of general nutrition and produces rickets and craniotabes at the same time. In congenital rickets, craniotabes accompanies the other malformations, but it may exist alone at the time of birth and later be followed by other manifestations of rickets.

EDEMA IN THE NEWLY-BORN AND THE INFANT.—d'Astros (*Rev. Mens. Des. Mal. De. L'Enf.*, Sept. 1907) says that edema is a common manifestation in the debilitated newly-born, especially in the premature infant. Simple edema of the newly-born is found most often in premature infants, especially in very feeble infants of this class. It may appear immediately after birth or not for several days. Its first localization is most often in the lower extremities, though it may spread in some cases so as to be more general. In some cases it disappears in 3 or 4 days under proper treatment (external warmth and proper alimentation), though it may last much longer. In the course of such simple edema there is no albumen found in the urine. It is probable that this edema is due to

respiratory insufficiency and to circulatory stasis. In certain cases the edema of the newly-born is to be attributed to an acute infection of septicemic nature. Such infection, in nearly all of these cases, has attacked the kidneys, whose power of elimination is therefore reduced. The diagnosis of such infective edema can often not be made at first, but if the case of edema shows albuminuria, or if the umbilicus, the skin, the pharyngeal mucous membrane or the digestive or respiratory tract, show evidences of inflammation, such an infective edema must be suspected. Certain chronic infections may also produce edema in the infant. In this class, hereditary lues plays a most important role. The edema in syphilitic children may develop later, but at times it may be of diagnostic importance. In cases with enlarged liver and enlarged spleen, the presence of edema adds to the probability of the diagnosis of hereditary syphilis. Affections of the respiratory system may also cause edema. In addition to the infective edema noted above, it is noteworthy that certain forms of cough, especially convulsive cough, may produce a facial edema (influenza and pertussis). Finally, edema may develop as a consequence of grave digestive disturbances following severe cases of enteritis, and true anasarca may develop. In many of these cases there is no albumen in the urine and the edema is due to a retention of the chlorides in the tissues.

THE INFLUENCE OF CONSANGUINITY OF THE PARENTS ON THE CHILDREN.—Feer (*Jahrbuch f. Kinderheilk.*, Aug., 1907), as a result of his study of the literature and of personal observation, reaches the following conclusions: Characteristic or harmful results cannot be proven to be due to consanguinity of the parents, because the characteristic diseases of the descendancy of consanguineous parents can be explained by reference to other facts of heredity. A tendency to certain very rare diseases, and in addition to retinitis pigmentosa and congenital deaf-mutism, is much more likely to be inherited if these diseases are found in both parents. Inasmuch as the probability of such tendencies occurring in both parents is greater in consanguineous than in non-consanguineous parents, it becomes probable that with reference to retinitis pigmentosa and congenital deaf-mutism, consanguinity in parents plays some role.

OPHTHALMOLOGY.

IN CHARGE OF
JOHN GREEN, JR., M. D.

ON TEMPORARY HYPERTONUS.—Dufour (*La Clin. Ophtalm.*, June, 1907).—The so-called nocturnal dry conjunctivitis, of which the symptoms are heaviness of the lids on rising, feeling of resistance to ocular movements, and absence of secretion, is, according to Dufour, really the expression of an evanescent rise of tension. The increase of tension is said to be due to the dilatation of the pupil consequent on the darkness, to the lowering of the force of the general circulation, and in some cases to pressure on the vessels of the neck by tight clothing.

No direct evidence of increase of tension is given, and the whole conception seems a bit nebulous. Treatment recommended is pilocarpine on retiring, light kept in bedroom during sleep, and active exercise soon after rising.

CLINICAL AND THERAPEUTICAL CONSIDERATIONS IN BUPHTHALMUS.—Abadie (*La Clin. Ophtalm.*, June, 1907).—Abadie makes the distinction

between glaucoma and buphthalmus, in that in the former the rise of tension is due to an affection of the sympathetic, and in the latter there exists a chorioretinitis which may escape detection because of the haziness of the media, or because it remains confined to the anterior portion of the globe. Under favorable circumstances areas of atrophy and abnormal pigmentation of the choroid can be seen. Even if these signs are not discoverable, the disease is probably present, for the same method of treatment proves effective as in those cases in which the choroidal lesions are expressed. The treatment consists in the administration of mercury, preferably by intramuscular injections. A case is mentioned in which several sclerotomies had been performed with no result beyond the production of iridic herniæ, but injections reduced both the tension and size of the globe permanently. The conclusion drawn is invariably to try mercurial treatment before resorting to operation and then to begin with paracentesis and only if this fails do iridectomy.

PASSIVE CONGESTION IN OPIHTHALMOLOGY.—Hesse (*Centrallb. f. Aug.*, May, 1907, p. 133).—Hesse has employed suction by means of glass cups in all cases of serpent ulcer within the past year. The application is made over the open lids, twice daily for 10 to 30 minutes, with short intermissions after each ten minutes. The operation is not painful and it relieved the frequently violent pain at once. Only in three cases out of twenty-three was the treatment a failure, and these were complicated by dacryocystitis. The average duration was eleven days.

PREVENTIVE TREATMENT OF TRANSFERRED (SO-CALLED SYMPATHETIC) OPHTHALMIA.—Oliver (*Journ. A. M. A.*, July 27, 1907).—Conditions tending to diminish the number of cases of this formidable disease are: (1) Better construction of factories and shops; (2) compulsory employment of protective devices by workmen; (3) personal cleanliness; (4) prompt treatment of ocular injuries; (5) immediate attention to first aid, and (6) the best possible instrumental equipment of hospitals and dispensaries. Direct causes are to be reached by increased certainty in the use of the x-ray for localization, the prompt removal of foreign bodies from the interior of the eye, early enucleation of hopelessly injured globes, better preparation of the patient for aseptic operation, continuance of control therapy, and better facilities for keeping the patient under prolonged observation.

OTOLOGY AND LARYNGOLOGY.

IN CHARGE OF
W. E. SAUER, M. D.

OTTIC PHLEBITIS; ITS SYMPTOMATOLOGY, DIAGNOSIS AND TREATMENT.—McKernon (*Jour. A. M. A.*, Sept. 14, 1907).—According to the author, the principal symptoms in otitic phlebitis are, gradual rise in temperature to 104-106 degrees F., which is quickly followed by a remission to normal or below, the rise in temperature depending upon the amount of septic material entering the general circulation; and the exacerbations may be one or several during the twenty-four hours, depending on the rapidity and the quantity of the poison entering the general circulation. Chills are present in about 50 per cent of cases, and they usually precede the rise in temperature. The patient may exhibit simply chilly sensations which are quite as important as a definite

chill. The pulse is rapid, 120 to 160, except when there is pus in the brain; then it may be much slower. The respiratory changes are slight in the early stages of the disease, but increases to 40 or 50 during the hyperpyrexia. Pain is usually very great. Nausea and vomiting are usually present at some stage of the disease.

The diagnosis is made by the above symptoms, and in those cases where the sinus is operated on at the time the mastoid operation is done, we are guided by the physical signs present. Briefly, they are, at times the presence of a necrotic area of bone above and around the sinus, with usually a perisinuous abscess. The dura is thicker than normal, dark in color and lustreless; at times there is adherent to the sinus wall a grayish plastic exudate; the sinus looks flat, is easily compressible and does not refill rapidly.

The treatment consists in removing a little of the bone from the sinus, from a point above the bend of knee, down to the region of the bulb. Small pieces of iodoform gauze are rolled up and placed over the upper end of the sinus, pressed firmly under the edge of the bone to cut off the circulation in the vessel. A similar piece of gauze should be placed over the bulb, and the dura forming the anterior sinus wall should be freely incised and the contents evacuated. The gauze over the bulb is removed, and if there is a free return of blood, the sinus is packed and we must await further developments.

INTRATYMPANIC OPERATIONS UNDER LOCAL ANESTHESIA.—Ballin (*N. Y. Med. Jour.*, Oct. 5, 1907).—The author's method of anesthetizing the drum membrane is as follows: The external auditory canal is first thoroughly cleansed with an antiseptic solution. A small piece of cotton is then placed in the canal so as to protect the drum against the ethylchloride spray, which would otherwise cause too much pain. Having done this, a cleft speculum is introduced in such a manner that only the superior wall of the canal is exposed to view. With the aid of an assistant a spray of the ethylchloride is now allowed to play on this exposed surface, and as soon as the parts are well anesthetized the needle of the syringe is quickly introduced at the junction of the bony and cartilaginous canal, and the fluid is slowly injected. The author uses 10 to 15 minims of a 1 per cent solution of cocaine, to which 5 to 6 minims of adrenalin solution (1-1000) have been added. Injection must be carried out very slowly so that infiltration takes place gradually, thus avoiding unnecessary pain. The little piece of cotton is now removed from the canal; waiting from 5 to 10 minutes it will be noticed that the drum has a bleached appearance, and has also become so insensible to pain that a paracentesis can be performed without any annoyance to the patient. The operation takes about 10 minutes, and can be employed in all adult cases; children being too restless, generally require a general anesthetic.

THE MOUTH OF THE ESOPHAGUS.—Killian (*Laryngoscope*, June, 1907).—According to the author, a circularly arranged musculature distinctly guards the entrance to the esophagus. This musculature is evidently closely connected with the cricoid cartilage, or else it would not be possible to pull the orifice of the esophagus forward with the larynx when traction is made on the latter. Anatomical investigations prove that the portion of the inferior constrictor, known as the cricopharyngeus, is thus closely connected and begins on the side of the cricoid cartilage behind the cricoid-thyroideus, loops around the entrance

of the esophagus, and reaches the other side of the cricoid cartilage. The element of tonic contractility of this muscle explains the phenomena. The author has found, after examining a number of subjects, that in the area of the lower third of the cricoid cartilage, a thick, crescent-shaped fold protruded bilaterally from the posterior wall of the hypopharynx forward to the cricoid cartilage. The observation explains a whole series of phenomena which until now were more or less obscure. He concludes by saying, that this condition accounts for the fact that the mouth of the esophagus is a favorite site for the lodging of foreign bodies; that in the introduction of instruments, great resistance is met here, and that we may safely assume that spastic irritations in the mouth of the esophagus may contribute somewhat to the formation of pulsating diverticula of the esophagus, which are really of the hypopharynx.

MEDICAL LAW AND MEDICAL JURISPRUDENCE.

IN CHARGE OF
IRVIN V. BARTH, LL. B.

BASIS OF EXPERT OPINION.—Louisville Ry. Co. vs. Oppenheimer (Court of Appeals of Kentucky, October 18, 1907).

In a personal injury action the defendant introduced a physician who had treated her to testify as to her symptoms and physical condition. The physician, after detailing the symptoms, was uncertain in his testimony as to what those symptoms indicated—as to whether she had suffered a miscarriage or was suffering from polypus. Three other physicians, who had heard the testimony of this physician, were then introduced, and were allowed to testify that from the symptoms indicated by their brother physician, already in evidence, in their judgment defendant had suffered a miscarriage. It was held on appeal that the three physicians' testimony was properly received. The court said: "There was no contrary evidence as to the facts. The experts were not told to weigh any facts, but they took as true the facts stated by Dr. Hitt. His statements were clear and unequivocal. They were not contradictory in any way, and so when the questions were put to the witnesses in this form the result would have been substantially the same if the attorney had grouped in one question the facts stated by Dr. Hitt and asked the experts their opinion of what was the matter with Mrs. Oppenheimer from these facts."

NOTE.—As intimated by the court, had the facts already in evidence been addressed to the experts in the form of a proper hypothetical question, their testimony would have been received without question. It is clear, therefore, that on principle the physicians were properly allowed to testify by offering an opinion based upon the undisputed facts developed by another witness whom they heard testify in the cause. This is in accord with the great weight of authority. But it must be here observed that physicians are not allowed to testify as experts where they base their opinion upon statements made to them by parties out of court and not under oath. Accordingly it has been held that "the opinion of a physician, called in consultation with the attending physicians, cannot be received if based upon declarations made to him by such physicians, or by the wife and nurse of the patient, as to his previous symptoms or condition." Likewise, is an expert disqualified from testifying where his opinion is founded

upon minutes of the testimony of others in court taken by counsel, rather than upon the testimony actually introduced.

But this principle of exclusion does not apply to the opinion of a physician based *in part* on statements made to him by his *patient*, intended to enable the physician to more accurately diagnose the case and prescribe a course of treatment. Although it is well established that physicians may give to the jury their opinion founded on a personal examination of the patient, and on statements made by the patient at that time as to his *present* bodily condition, the law is somewhat confused when that opinion is based upon a narrative of past experience by the patient, or upon a "history of the case." Rogers, in his work on "Expert Testimony," says: "The physician cannot give to the jury as evidence the patient's history of the case, or statements in respect to the cause of the trouble, or in respect to past experience with it; neither can he express an opinion which he bases on such history or statements as to past experience. But it has been held that a physician may testify to a statement or narrative given by a patient in relation to his condition, symptoms, sensations and feelings, both past and present, when such statements were received during, and were necessary to an examination with a view to treatment, or when they are necessary to enable him to give his opinion as an expert witness." And in *Missouri*, in the case of *Halloway vs. Kansas City* (1904), 184 Mo. 19, the rule was expressed as follows:

"The statements of plaintiff with respect to her past physical condition were mere hearsay, and should not have been considered by the expert in expressing his opinion as a witness as to her physical condition at the time of the trial. The decided weight of authority and the better reason we think supports this contention. It follows that the court committed error in allowing the expert witnesses to give their opinions based upon the history of plaintiff as they learned it from her in diagnosing her case, or while treating her."

Much of this inconsistency would seem to be more apparent than real. The reason of the hearsay rule would properly exclude an opinion based *wholly* on a narrative of past experiences by the patient, but would make an opinion competent where such opinion has its foundation essentially on a personal examination of the patient, aided by his statements as to condition, past and present, and calculated to throw light upon the disease or injury. This principle should reconcile many of the decided cases.

CORRESPONDENCE.

LONDON LETTER.

(FROM OUR OWN CORRESPONDENT.)

The Harveian Oration before the Royal College of Physicians of London was delivered this year by Dr. Frederick Taylor, now Consulting Physician to Guy's Hospital. It was the express wish of Harvey that "once a year there shall be given a solemn oration to commemorate the benefactors of the College, and to encourage its members to search out the secrets of Nature by way of experiment." For the annual fulfillment of his wish he made due provision, and the long list of orators reaching from just after Harvey's death down to the present year includes all that is best, all that is sagest, and all that is most distinguished in English medicine. It affords an opportunity not so much to do honour to Harvey and the splendour of his discoveries, or to justify the scientific method he employed, but rather to pass in review the actual position of medicine and to insist upon the need for further research on Harvey's lines into the mysteries of nature. Coming from one having the authority of eminent position, of proven worth, of ripe experience, and of seasoned judgment the oration forms a most effective corrective to the clotted nonsense put forth in all seeming seriousness by the opponents to research by experiment. Dr. Taylor right worthily maintained at their high level the traditions of his office, and made a powerful appeal to the lay public to promote, rather than to hinder, scientific research not indiscriminately but on the ordered plan deemed necessary by those best qualified to judge. The progress already attained has been enormous; equally so is our ignorance of natural phenomena in relation to disease and its treatment or control. Starling's work on the chemical relations of the functions of the body was instanced as being particularly in accordance with the spirit of the man who was being commemorated that day. The improvements in surgical practice leading up to aseptic methods and the advances in therapeutics were briefly discussed, more especially those of the latter connected with prevention and immunity, treatment by antitoxines and opsonic methods. The reverse side of the medal was shown by the fact that among the diseases of which the micro-organisms were known, few can be prevented, cured, or exterminated by the physician. As an apt example influenza was quoted, for, although for fifteen years its micro-organism has been known, no advance has been made towards checking its Protean vagaries.

After the Oration the President of the College, Sir Richard Douglas Powell, presented the Baly medal to Professor Starling for distinguished services to physiology, and took advantage of the occasion to express his peculiar pleasure in making the presentation of a medal founded in memory of a great and humane physician to one who had suffered most unjustly from accusations of inhumanity in his work, the brilliancy of which and the humanity with which it had, at all times, been conceived and carried out were recognized by the scientific world at large. The professor was formerly lecturer on physiology in his old school at

Guy's in succession to Wooldridge, leaving there to succeed Professor Schäfer at University College.

In his scheme for the re-constitution of the Army no detail has escaped the meticulous vigilance of our Secretary of State for War. Mr. Haldane is nothing if not thorough, but he has the happy gift of using the *suaviter in modo* to great advantage and thereby gets things done. In order to settle the matter of the medical duties required by the Territorial, or Home Defence, Army he has taken a course which should undoubtedly lead to complete success. Sir Alfred Keogh, the Director-General of the Army Medical Services, has been given a free hand in organizing a Royal Territorial Medical Corps and is addressing meetings of his own profession asking frankly for their help and advice in bringing about a workable and satisfactory scheme. "The old order changeth yielding place to new." The foretime Army doctors were, next to, but after, the chaplains, the most military men in the Army, and from this elevated position they looked down with scorn upon the rest of humanity—civilian humanity that is, especially that part of it engaged in the humbler walk of general practice. It must be confessed that the scorn was in large measure returned with interest. A far better state of affairs has been gradually in process of evolution, and the course taken by the Director-General is of the happiest omen. It is proposed to organize a medical service in three distinct branches. One of these will serve with the force in the field and on the lines of communication, whose duty will consist in keeping the field force entirely clear of sick and wounded, passing them as rapidly as possible back to a station or general hospital, *viâ* field-ambulances and clearing hospitals. The existing Volunteer medical staff can, and is willing to, be adapted to form the basis for this service. It is in the organization of the second branch, the provisions of medical and surgical staffs for the general hospitals, that the co-operation of the medical profession is invited. The hospitals and the administrative staff will be supplied by the Army, but Mr. Haldane relies on the patriotism of the medical profession to furnish the professional staff. The third branch is the establishment of a sanitary service. Such a service has recently been organized in the regular army, a school being established at Aldershot under the able superintendence of Lieut. Col. R. H. Firth, to whom is due the credit for the conception and realization of this most useful and, as past experience shows only too painfully, supremely necessary service. It is quite independent of the hospital department and has already proved most satisfactory in working. Sir Alfred is appealing to the Medical Officers of Health for their co-operation in this part of the scheme. There is very little doubt but that a thoroughly workable and practical scheme will eventually be secured, and such a result will be largely due to the tactful and courteous way in which the matter has been submitted for consideration.

The Bradshaw Lecture at the Royal College of Physicians of London was delivered by Sir James Barr, Senior Physician to the Liverpool Royal Infirmary, who chose for his subject pleural effusion and its treatment, dealing more particularly with the physics of the pleura which he considers to be of more importance in the treatment of pleurisy than a good many of the drugs in the *Pharmacopœia*. For treatment Sir James now recommends the complete withdrawal of the effusion in all cases by means of the siphon in preference to the aspirator. Before

any great negative pressure is established and before the patient feels any discomfort the siphon is stopped and sterile air, equal in quantity to the amount of fluid withdrawn, is introduced into the pleural cavity. The siphon is then re-established and all the fluid withdrawn. This done, an injection of 4 c.c. of adrenaline solution (1 in 1000), diluted with 8 or 10 c.c. of sterile normal saline, is introduced and if necessary more sterile air so as to make the total amount equal to half or three-fourths of the bulk of the fluid withdrawn; the larger quantity is introduced in tuberculous cases. Air is preferable to oxygen as it is more slowly absorbed. His attitude towards drugs for promoting absorption was illustrated by the not infrequent reply of an Irishman when questioned as to the good effect of a medicine, "Well, thank God, it has done me no harm, anyhow."

November 9, 1907.

PARIS LETTER.

(FROM OUR OWN CORRESPONDENT.)

ABOUT FORENSIC MEDICINE.

If in the majority of cases of sudden death it is possible to say that a lesion of the heart, of the lungs, the brain and the kidneys, is the cause, there yet remain a number of cases in which it is impossible to solve the problem of the immediate cause of death, for neither a bacteriological nor a toxicological examination can be the means of arriving at a correct conclusion. And when this uncertainty causes the guilty to be set free or the innocent to be condemned, the complications which beset the problem are awful to contemplate. The medical expert upon whom rests the responsibility of making clear to the court the true cause of death should not overlook the slightest scientific point bearing on the case before arriving at his conclusions; in fact he should not advance any ideas until sure of his attitude. Above all he should guard himself from putting forth an hypothesis or giving credence to his intuitions.

A case which some two years ago made a considerable stir and which has recently been opened under particularly distressing circumstances, has brought to light a controversy which contains the delicate question as to the worth of medical testimony in a criminal court. One, Jeanne Weber, who had the care of infants, had the misfortune to lose four of them within one month. A few days later another developed alarming symptoms and, upon being taken to a hospital, an examination revealed a blackish groove around the child's neck which indicated that an attempt at strangulation had been made. Jeanne Weber was immediately arrested and an exhumation of three of the four bodies (the fourth child died of diphtheria) was instituted. Three experts were summoned and all agreed that it was impossible to determine the true cause of death because the bodies bore no signs of violence and the viscera showed no indications of poisoning. The case was tried in the Court of Assizes, in January, 1906, and a verdict in favor of the defendant was returned.

The case was forgotten, when on April 17th last, near Chateauroux, a young child, apparently well the day before, suddenly died in the arms of a domestic who proved to be Jeanne Weber. The two medical practitioners who conducted the autopsy reported that around the child's neck they found an ecchymotic line. However, they could find neither a subpleural nor a subpericardial ecchymosis. Unable to arrive at a

definite conclusion the experts declared that it was clear to them that the marks of violence must have been inflicted on the child during life.

On July 27th the body was again examined by the two experts from Paris who had performed the autopsy on the first bodies. Both experts from Chateauroux were present at this second autopsy but they did not waver in their conclusion as noted above, though their colleagues from Paris attributed the death to walking typhoid. On account of this discord and the procureur-général giving as his opinion that there was not sufficient cause to give rise to an action at law, the Chamber which returns indictments in France has recently named three new experts who will study the documents relating to the case and make a statement which shall be considered the last resort.

Such in brief is the résumé of the events of the case. We are quite sure that the Paris medical experts, one of whom is professor of jurisprudence, are really of the opinion that their colleagues at Chateauroux allowed themselves to be influenced by public opinion, which is decidedly hostile to Jeanne Weber, and that it would be well for the Chateauroux physicians to remember that a medico-legist cannot be improvised; moreover medical jurisprudence is a specialty which demands special study so as to prevent a false interpretation of so-called facts, a mistake easily made by all those inexperienced in such matters.

The fact that a number of children had died whilst in the care of Jeanne Weber cannot be disputed; but we do not also know that analogous cases have taken place where it was impossible to attribute the cause to any criminal intervention? Especially with children sudden death is not infrequent and as for strange coincidences they occur often enough not to fill us with surprise. Therefore can we say in all truth that public opinion as evidenced at Chateauroux influenced the experts of that town as regards their opinion?

Perhaps the report of the three new experts will be the means of arriving at the truth. Meanwhile it would be well to remark that this case has brought to light the question of the competence of medico-legists, and the judgment exercised in their selection. The Paris faculty some years ago created a special diploma for medical jurisprudence and psychiatry; it was firmly convinced that by doing this certain recognized defects would be remedied. Now the outcome of this move on the part of the Paris faculty has caused nothing but discontent; and the intricacies when a question in forensic medicine comes up are the same as they were before the diploma was granted. Since this diploma gives the possessor no special prerogative, and the judges have the right as to the choice of medical experts, generally physicians who have their confidence, it can readily be seen that this course of procedure is not faultless.

Thus we see that legal medicine cannot be learned in a few months, and that to draw up a report requires something more than a book knowledge of the subject. That is to say, directly upon leaving a medical school one is not at all capable of filling so exacting a position as that of medico-legist; in addition to knowledge and professional experience, it should be imperative that a knowledge of mankind and things in general should be acquired; and this can be done only after years of hard study. In the beginning of one's career there is often lacking the sangfroid necessary to resist all suggestion from without; and to limit one's conclusions to the stated facts, without affirming anything which might be construed as one's own opinion, can be acquired only after a long apprenticeship. For truth to say, it is precisely in connection with

what we have just stated that the real difficulty in selecting a medical expert, especially in criminal cases, occurs. Under the conditions which exist today the selection of medico-legists cannot be based on scientific grounds. Nevertheless, the problem is sufficiently grave to warrant deep thought, so that results in conformity with the wish of society, the demands of science, and the exigency of the highest court, may be achieved.

November 15th.

LETTER FROM THE PHILIPPINES.

(FROM OUR OWN CORRESPONDENT.)

To Americans first coming to the Islands the hyperactivity of the skin is a source of considerable annoyance and discomfort. To the medical man the various phenomena connected with the action of the skin are of much interest. Localized sweating is common and I have recently observed a case in which there was profuse sweating of one leg at night, the rest of the body remaining dry. Another peculiarity is the rapid disappearance of callous spots from the feet. A chiropodist would find little to do here, I fear. Notwithstanding this, skin diseases are very common and few persons who reside here for any length of time escape the many infections that exist in this part of the world. Urticaria seems to be especially common, and one sees a great deal of prickly heat, dhobie itch and furunculosis. Dhobie itch is often applied to a variety of diseases, but most of us out here recognize two varieties, the vesicular form and the ringed form, the latter being probably a *tinea circinata*. Where so much of the washing of clothing is done by native women who never boil the clothes, it is not surprising that this disease should be easily contracted.

A disturbing and peculiar affection known as pompholyx is extremely common among the whites and is occasionally seen in the natives. The palms of the hands and soles of the feet, the sides of the fingers and toes and the web between are the ordinary seats of the disease. The pathological features are hard, shot-like papules which are deeply seated and push their way up, as it were, to the surface. These contain a clear fluid which exudes when the papule is punctured. They often exist in vast numbers and the affair is a serious matter sometimes, since the papules are very painful and often become infected. Successive crops may appear under the old lesions, as the skin is being shed, rendering the affected individual miserable for months; I have seen a case in which a man was unable to walk for eight months on account of the disease; the origin and cause of the disease seemed to baffle all investigators. Local applications seem useless and the only remedy which has any effect is arsenic.

I recently talked with an army surgeon, who is at present working upon the cause of the disease, and he expects shortly to contribute something of value concerning its etiology. Several cases of yaws have been seen in the southern Islands and it is probable that the disease is common. One case has occurred in an American soldier; whites, therefore, are by no means immune. I have seen a number of fresh cases, mostly in young children in the same family. In one instance the mother showed the scars of old yaws long ago healed, while the four children presented characteristic mulberry-like growths. Yaws is supposed to be a general or constitutional disease with local manifestations, but in a number of cases there are but four or five growths upon

an individual, so that surgical treatment, namely, excision, would seem to be a wise measure, especially as the affair seems to be autoinoculable. In a case recently seen there was a large yaw upon the side below the ribs and another had just developed over the inner condyle of the arm where the skin had come in contact with the infectious material. When sectioned and stained the yaw shows spirochætæ and this has led some to believe there is some connection between it and syphilis. This is probably not the case, since the spirochætæ in no wise resembles the pallida. Potassium iodide is generally used in treatment, but it as often fails to improve the patient as the reverse. I have given a case mixed treatment with no apparent benefit. In another case I excised the lesions with good results and no return after several months.

One cannot be here long without becoming enthusiastic over the examination of the feces. A wealth of material is there and he who neglects this important feature of the laboratory examination in the tropics, falls far short in his mission. At one of the large army posts which I have just visited one of the medical officers devoted his whole time to laboratory work. Every case admitted to the medical ward was examined for intestinal parasites, no matter what the diagnosis. The result was surprising. Men who had "indigestion" were found to harbor *ascaris lumbricoides*, *tænia solium*, the whip worm, *ankylostoma duodenalis*, flukes, and amœbæ. In almost every specimen can be found amœbæ, and doubtless all persons who have been here a couple of years have these parasites. They are not active but have assumed the "resting," or ringed, stage and it probably needs some bowel lesion to bring out their motility and pathological activity.

It is doubtful if there is a native one here who does not harbor one or more varieties of intestinal parasite, and a doctor in Manila stated to me some time ago that he had not done an autopsy for many months upon a native without finding one or more *ascaris lumbricoides*.

At all army posts and even in the field, the American soldier is well cared for; he is obliged to drink nothing but boiled water and is punished if he disobeys, but even with all this care, there are always a few cases of dysentery to be found, while among the Americans here, who form the civilian population and who are not as careful since they are not under surveillance, there must be many cases of incipient dysentery which are perhaps regarded at first as simple cases of dyspepsia.

A short time ago cholera appeared in Leyte and is still unchecked in one or two towns. It also appeared in Manila, but the fear that a sweeping epidemic would occur proved groundless. Sanitation and sanitary principles are upon a fairly firm ground; now and then are energetic and capable health officers everywhere in the Islands, so that there is no reason to suppose that the situation will not be controlled.

Dengue seems to be fairly frequent this year in some parts of the archipelago and has appeared in epidemic form among some of the native troops.

Endemic hemoptysis, so common in Japan and Formosa, is not infrequent here. The cases are generally mistaken by the inexperienced for tuberculosis and the cough and blood spitting are certainly very suggestive. If the sputum be stained for tubercle bacilli, none will be found. A medical man here reported to me that he could not understand why so many of his apparently serious tuberculosis cases with blood spitting got well. I think to assume that these were cases of endemic hemoptysis, infectious with the *paragonimus*, would explain the curious fact. The disease does not seem to be very serious and the individual

may seem perfectly well most of the time. The trouble is easily diagnosed if a little of the bloody material in the sputum be examined fresh; the paragoninus eggs are then easily recognized.

If one can put up with absence from the United States, with the consequent loss of the many pleasures he has there; if he is willing to lead the simple life and cares to work with a microscope, to him the Philippine Islands hold out many treasures in the solving of the medical and sanitary problems which confront the white race, transplanted by destiny to the tropics.

OBITER DICTA FROM FOREIGN JOURNALS.

A FEW REMARKS ABOUT JOURNALISTS.

"For some weeks measures have been taken by the physicians of Charenton (France) to increase their rather modest pay," writes A. Demmler, in *Le Progrès Médical*. On account of this effort, which was modesty itself, for the increase suggested was slight, a veritable war against the physicians has been opened up by the daily press; the *Petite République*, in particular, going so far, in its issue of October 16th, as to accuse all physicians of disowning the grandeurs of the Samaritan. It would be well here to relate an anecdote that might interest our friends, the journalists. It is said that on a certain occasion Velpeau was called upon to spend all night with a patient. Upon demanding a modest remuneration the patient indulged in considerable criticism, not to say abuse. Velpeau, containing himself, replied: "For the amount I am charging, would you do as much for me as I have done for you?"

To the writer of the article in the *Petite République*, who accuses us of forgetting the duties of the Samaritan and indulging in exaggerated pretensions, we would put the question: Would you, writer of wise words, fill the role of the Samaritan, that is to be in the streets at all hours; climb, no matter what your age, innumerable steps to reach apartments on the top floor, only to be greeted with disagreeable words, frowns and general surliness; have your sleep and meals interrupted; your family life, your holidays, upset by nervous patients, who though tearfully pleading for help are really rank egoists: in a word, be to the end of your days this wonderful Samaritan, without the privilege of sleeping when sleep is absolutely necessary, with no rights, no advantages, sometimes no remuneration, and even niggardly denied the glory that should come from attending many cases gratuitously?

You would hesitate about filling this arduous part, of that we are certain.

Instead of accusing physicians of cupidity it would be well, for the writers of the press, to come into closer contact with them so that a knowledge of their mentality could be acquired. With a better understanding of the mental status, we feel that our critics would be convinced that the best course for them to pursue is to allow the physicians to judge for themselves as to the propriety of their actions. Surely, disinterestedness, devotion and self-sacrifice—characteristics of the daily life of the busy practitioner—need no lessons from without. And further, charities of the silent sort are not less altruistic than their congeners with flamboyant signs. Therefore, to remind the past-masters of the silent charities, the physicians, of their duties is supererogation, for have they not always been in the vanguard of the fighters for the alleviation of human misery.—(Translated for the INTERSTATE MEDICAL JOURNAL).

TREATMENT AND PROPHYLAXIS OF SYPHILIS.

At the Congress of Hygiene and Demography recently held in Berlin, Prof. Metchnikoff delivered an exhaustive address on the treatment and prophylaxis of syphilis. Among other things he said: "The principal reason why I experimented on monkeys was to ascertain if atoxyl could be utilized in the prevention of syphilis at a period when *pommade au calomel* was useless. The fact that an injection of atoxyl, made a fortnight after the inoculation, prevented an infection, was to me a matter fraught with the greatest importance. But the question of the toxicity of atoxyl which has agitated the physicians who have used this medication, loomed large before me. If it be true that this arsenical preparation affects the sight, it can readily be seen that one would hesitate employing it, especially as a prophylactic measure. But should the doses which suffice for a monkey be taken as a basis for the quantity to be injected into an adult male, the calculation of about 2 grammes for an individual weighing 60 kilos (132 lbs.) would not be incorrect. But this should not be forgotten, that since it has been shown that the cure of syphilitic manifestations, in some cases, is accomplished with smaller doses, it might be possible that a prophylaxis could be achieved with doses of less strength.

"M. Hallopeau, who has had the widest experience with atoxyl in the treatment of syphilis, recommends an injection of 75 centigrammes, followed by a second injection of 60 centigrammes, and a third of 50, making in all 185 centigrammes. In no case where similar treatment was pursued did he observe intolerance or any signs of toxicity.

"I should like to take this opportunity of remarking that in one of my experiments a pig-tailed macaque received only 5 centigrammes of atoxyl, eleven days after inoculation with the syphilitic virus. He died 46 days after, without manifesting any signs of syphilis. While this delay in administering atoxyl cannot as yet be advocated, though in some cases the period of incubation lasts more than 50 days, the fact remains that a dose of 5 centigrammes for a monkey weighing more than 2 kilos (4½ lbs.) prevents the hatching of syphilis. Before I was able to repeat the aforementioned experiment, I was compelled to apply the medicine to a man, who solicited my intervention. This individual was cultured and decidedly intellectual, and he came to me on account of extreme anxiety following a suspicious sexual contact, which took place 5 days before. To my question: 'Why do you not use *pommade au calomel*?' he replied that this old preventive was unknown to him. He begged me forthwith to administer atoxyl since his anxiety was almost driving him frantic. Although it was impossible to establish with certainty the possibility of an infection, Docteur Salmon, remembering his experiments on monkeys, decided to make two subcutaneous injections of atoxyl, of 50 centigrammes each, at intervals of two days. This treatment relieved the patient of his anxiety thereby restoring his normal moral tone; furthermore there were not the slightest manifestations of toxicity. In the second case, Dr. Salmon had to deal with a neurasthenic who neither

slept nor desired at any cost to be treated in a preventive way for fear of being infected with syphilis. Nevertheless he received two injections of 50 centigrammes of atoxyl without showing the least intolerance. Let me add that I do not desire any conclusions to be drawn from these two cases.

"Our hope is that in the near future we will possess an arsenical preparation less toxic but just as efficacious as is atoxyl in the incubative period of syphilis. The experiments which shall lead to this fortunate outcome are making at present. But for the moment, since these experiments are really in their incipency, we must perforce fall back on *pommade au calomel*, which we do not hesitate to state is now our best preventive in the first hours after an infection."

The remarkable efficacy of this *pommade*, when applied to human beings, as well as the successful results following the use of atoxyl injections in monkeys, indicates that the syphilitic virus, during the greater part of its long incubation, is taken up by the organism only with considerable difficulty. To verify this statement, I will mention that I have examined the serous extract from points of inoculation in the chimpanzee and in two macaques, during the period of incubation, by means of the ultra-condenser of Reichert, which showed very readily the syphilitic spirilla on a dark base and furnished the best means of revealing the presence of these microbes even when the quantity was very small.

After all, in spite of most favorable conditions, we have not as yet been able to ascertain the presence of Schaudinn's spirilla during the fortnight following an inoculation of the virus. This goes to show that a long time elapses before the spirillæ reproduce themselves in appreciable quantities. And it is for this reason that the prophylaxis of syphilis is relatively simple and easy. But the thing that is most difficult, is to convince the public of the importance of this fact."—(Translated for the INTERSTATE MEDICAL JOURNAL).

MEDICINE AND THE NATURAL SCIENCES.

The natural sciences have always been a part of the medical curriculum; in fact, for some time we have been in the habit of calling them disdainfully the "accessory sciences." Little by little their importance as part of a medical education is increasing, and the day is not far distant when the medical man who is not versed in the natural sciences will be thoroughly out of date as regards his attitude to his patient.

It is almost a waste of words to dwell on the well-known fact of the connection between the existence of man and that of animals and vegetables; and to assume, as was formerly done, the independence of man in nature is an extraordinary presumption. Were we to discuss philosophically all the aspects of the question of the relation of the natural sciences to medicine, the discussions would be without end; but what we wish to consider here is man as a living entity in the face of other living entities, and, especially, the war of man against animal organisms in his desire to preserve his health and his life.

The theory of phagocytosis which has solved the problem of resistance to diseases and to infections, a solution which has the support both of doctors and savants, is the work of a naturalist. By studying the amœbæ this theory was arrived at, a theory which has supplanted the humoral theory. Now what is true as to the studies which led to the discovery of phagocytosis, applies to all investigations on immunity and vaccination, which have been made since Metchnikoff's discovery; for undoubtedly they have been inspired by this primordial, doctrinal discovery.

Today medicine is reaping the benefits of the labors of the naturalists. We know the acarus, the helminth, and the filaria of Medine. Again, who but the naturalists have taught us the transmissibility of paludal fevers, of yellow fever, and the development of the insects which carry these diseases to man and animals. The mosquito is the propagating agent of these infections; it retains the virulent germ of these diseases during a number of days; it has the power of transmissibility, and finally its life is possible only under certain conditions of temperature. These are the things the naturalists have taught us as well as their applicability in each particular case. The science of hygiene has been inestimably enriched by these discoveries, and as for medicine it is becoming year by year a less and less inexact science.—(Translated for the INTERSTATE MEDICAL JOURNAL).

BOOK REVIEWS.

SURGERY: ITS PRINCIPLES AND PRACTICE. In five volumes. By 66 eminent surgeons. Edited by W. W. Keen, M. D., LL.D., Hon. F.R.C.S., Eng. and Edin., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Phila. *Volume II.* Octavo of 920 pages, with 572 text-illustrations and 9 colored plates. Philadelphia and London: W. B. Saunders Company, 1907. Per volume: Cloth, \$7.00 net; Half Morocco, \$8.00 net.

This volume is excellent in many respects. The various subjects are presented in an interesting manner, and the work is illustrated for the greatest part by cuts, which are distinctive and adequate. There is, however, an unfortunate curtailment of many of the articles. If there is a definite desire for another system of surgery, this should be a complete work, with the best that each author can give. There is an evident lack of balance in the present work. The Pathology of Disease of the Joints is covered in 14 pages, while 28 pages are given to a rather unusual chapter on Surgery Among the Insane, which is of interest, but not called for in such a work. Another excellent, but much too short, chapter is the one by Spiller on the Pathology of the Chief Surgical Disorders of the Nervous System, and we know of no better beginning for a complete treatment of the clinical picture. It is unfortunate that this excellent chapter is not followed by the chapter on Brain Surgery, rather than by chapters on Nerve and Spinal Surgery. The excellent chapter on Skin Diseases, by Fordyce, could easily have appeared in a later volume.

Chapter XXIII., on Diseases of the Bones, and the part of Chapter XXV. which deals with the Pathology of the Joints, are by Edw. H. Nichols, and covers the field to which he has devoted much time. This presentation is clear and in part complete, particularly the part dealing with the disease of the bones. Tuberculosis of the bones and joints is described minutely, and he takes occasion again to point out that the invasion of the joint is practically always secondary to a bone focus. Osteomyelitis is very well described, and the non-tuberculosis joint lesions are considered from a moderate viewpoint, not entering too deeply into the discussion of the various classifications, or leaning too strongly to any theory.

Robert W. Lovett has the clinical part of joint disease and also the chapter on Orthopedic Surgery in which he covers the subject quite thoroughly and authoritatively, and incidentally gives the most recent report of results of his own and his conferees' work at the Boston Children's Hospital.

D. N. Eisendrath has a chapter on fractures and dislocations, both complete, particularly in the methods of treatment.

An interesting chapter by J. F. Binnie deals with Muscles, Tendons and Bursæ. The parts dealing with muscles and tendons is quite complete and an innovation in classification, which is good. In the consideration of bursæ we fail to find any mention of that very important class, clinically, the subdeltoid bursitis. Gerrish has the chapter on the Lymphatic System. Woolsey's chapter on Surgery of the Nerves, and Surgery of the Spine are both excellently well done. There is a distinct disappointment when one finds so complete a description of peripheral operations for tic douloureux, some of them discarded, and find that we will have to wait for a later volume for the description of the cranial operations.

Another notable chapter is one by Dercum on Traumatic Neurasthenia, Hysteria and Insanity.

PROGRESSIVE MEDICINE. A quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., assisted by H. R. M. Landis, M. D. Price, \$6.00 per annum. Lea Brothers & Co., Philadelphia, 1907.

The first three volumes of Progressive Medicine for the year 1907 have appeared. As is well known, the literature of every branch of medicine is in this work carefully and critically considered by a recognized authority in the particular specialty. The essays are not mere abstracts, but interesting and most readable critical reviews, and the contributions appearing in the volumes for 1907 maintain the high standard to which the American reader has become accustomed through the previous volumes of this publication.

HANDBUCH DER GYNAEKOLOGIE. Herausgegeben von Professor J. Veit in Halle. Zweite Auflage. Erster Band. Verlag von J. F. Bergmann in Wiesbaden. 1907. Price: Mks. 16.60.

It certainly must be a source of great satisfaction both to the distinguished editor and to the publisher of this well-known work to realize that a complete exhaustion of the first edition has necessitated the preparation of a second edition. It is obvious that Veit has availed himself of this opportunity to have his handbook include all modern knowledge on this subject. As stated in the preface of the first volume, thorough changes have become necessary. A distinct difference between the new and old editions is the fact that many of the subjects are assigned to new men. Four of the former contributors, Gebhard, Gessner, Loehlein and Viertel, have died; four others, Fritsch, Frommel, Nagel and Winternitz, felt they were not equal to undertake again the onerous work of contributing comprehensive essays worthy of this famous handbook.

The following articles appear in the first volume: The Prevention of Infection, by Franz of Jena; Anomalies of Position and Mobility of the Uterus and Its Appendages, by Kuestner in Breslau; Myoma of the Uterus, Anatomy and Histogenesis being considered by Meyer of Berlin; Etiology, Symptomatology, Diagnosis and Prognosis, by Veit, the editor; Electric Treatment, by Schaeffer of Berlin; Palliative Treatment and Vaginal Operations, by Veit; the Abdominal Operations and Myoma as a Complication of Pregnancy, by Olshausen of Berlin.

Illustrations and book work are excellent, and the lists of bibliography appended to each chapter are the most complete extant.

BAKTERIOLOGISCHES TASCHENBUCH ENTHALTEND DIE WICHTIGSTEN TECHNISCHEN VORSCHRIFTEN ZUR BAKTERIOLOGISCHEN LABORATORIUMSARBEIT, von Dr. Rudolph Abel. Elfte Auflage. Pp. 120. Wuerzburg. A. Stuber's Verlag (Curt Kabitzsch). 1907.

For a number of years the demand of purchasers as well as the rapid advances of bacteriology have necessitated a new edition of this invaluable little compendium every year. Great compression, rigid selection and yet relative fullness of treatment characterize this edition as they did its predecessors. It is intended rather for the occasional worker at bacteriology than for the professional bacteriologist, but in its special field it is unsurpassed.

DISEASES OF THE STOMACH. By Dr. I. Boas. From the latest German edition by Albert Bernheim, M. D. Illustrated. Pp. 730. Philadelphia, F. A. Davis Co., 1907.

Boas's great work on diseases of the stomach requires no commendation on the part of the reviewer. It has been adequately translated, with occasional bracketed additions relating chiefly to the work of American surgeons in this specialty. Unfortunately a new German edition has just appeared, which makes this translation seem out of date even before it is issued.

MANUAL OF DISEASES OF THE EYE. By Charles H. May, Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department, Columbia University, New York, 1890-1903; Ophthalmic Surgeon to the City Hospitals, Randall's Island, New York. Fifth edition, revised, with 362 original illustrations, with 22 plates, with 63 colored figures. William Wood & Co., publishers, New York, 1907. Price, \$2.00 net.

The continued and deserved popularity of Dr. May's little manual is attested by the fact that it has passed through five editions in the course of seven years. Not only has the work been received with notable cordiality in English speaking communities, but it has also received the distinguished honor of translation into German, Italian, French, Dutch and Spanish. In this (fifth) edition a number of alterations have been made. Some illustrations have been replaced by superior ones and a new colored plate (XVI-A) with two additional fundus illustrations have been added. The volume has been brought up-to-date, but has not been increased in size, the original plan of presenting a book for the student and general practitioner having been adhered to.

SURGICAL DISEASES OF THE CHEST. By Carl Beck, New York. P. Blakiston's Son & Co., Philadelphia, 1907.

There is perhaps no field which could have been more properly selected for a special treatise than the chest, and in this volume there are points of excellence. In writing such a book the author can be expected to have attained

eminence in this special field, or to have added to its knowledge, and to judge from the long list of articles in the bibliography that are from the pen of Dr. Beck he has made the chest a special study, particularly in relation to the Roentgen ray. Throughout the book this phase is given particular prominence, one might say too much prominence. The best chapter in the book deals with pyothorax and its treatment, but some of the methods, such as irrigation of the cavity at the time of operation, are considered uncalled for by some surgeons. The chapter dealing with diseases of the breast falls short in many particulars, while that on subphrenic abscess is quite complete. The anatomy of the thorax is of the ordinary descriptive text-book kind.

HANDBUCH DER GEBURTSHILFE. Herausgegeben von Professor F. von Winckel in Muenchen. Dritter Band, zweiter Theil. Verlag von J. F. Bergmann in Wiesbaden. Price: Mks. 28.

This is the seventh volume of this monumental work. Through the numerous references made in these pages on previous occasions the reader probably is well acquainted with the extensive scope of the work. It is an encyclopedia of obstetrics, comprehensive in every detail of present knowledge of every obstetric question. This second half of the third volume is a book of 1025 pages, containing the contributions of Winckel, Braun von Fernwald, Herff, Walthard and Widbolz, and Doederlein. The subject covered in this volume is the pathology and therapy of the puerperium. Winckel continues his interesting history of gynecology, devoting a chapter to the Italian, English, Dutch, French and Scandinavian gynecologists of the nineteenth century.

PRACTICAL DIAGNOSIS. The Use of Symptoms and Physical Signs in the Diagnosis of Disease. By Hobart Amory Hare, M. D. Sixth Edition. Illustrated. Pp. 616. Lea Brothers & Co., Philadelphia and New York. 1907.

Hare's book has always been one of the best and most complete compendiums of bedside diagnosis. The new edition is fully up to the standard of its predecessors and will be found as useful as they to the general practitioner.

NEPHRITIS. A Manual of the Disease commonly called Nephritis, or Bright's Disease, and of Allied Disorders of the Kidneys. Pp. 134. By Seelye W. Little, M. D. The Grafton Press, New York. 1907.

In this little monograph the author presents the results of his work and his experience in the complex group of conditions characterized by renal insufficiency. Many of his views are original and not all will meet with unqualified, general approval, but the book is stimulating and pleasant reading. The chapter on dietetics in nephritis will be found especially useful.

UEBER DIE DIAGNOSTISCHE U. THERAPEUTISCHE VERWERTUNG DES ALT-TUBERCULIN IN DER INTERNEN PRAXIS. Von Dr. H. Luedke, Wuerzburger Abhandlungen, etc. VII. Band, 9 Heft. Pp. 25. Wuerzburg. A. Stuber's Verlag (Curt Kabitzsch). 1907.

A fairly complete discussion of the diagnostic and therapeutic use of tuberculin from the German point of view. The important work done in this field in America, especially at Saranac, is not touched upon and was apparently unknown to the author.

A MANUAL OF HYGIENE AND SANITATION. By Seneca Egbert, A. M., M. D. Fourth Edition. Illustrated. Pp. 498. Lea Brothers & Co., Philadelphia and New York. 1907.

The tremendous scope of the subject precludes completeness in a handy volume of the size of Egbert's Manual. It will, however, doubtless be found useful by those who, for some external reason, do not care to possess one of the more extensive works on general hygiene.

A MANUAL OF SURGERY FOR STUDENTS AND PHYSICIANS. By Francis T. Stewart, Professor of Surgery, Philadelphia Polyclinic. (504 illustrations.) P. Blakiston's Son & Co., Philadelphia, 1907.

This book is a thoroughly satisfactory manual treating of modern surgery, and is safe and sufficient to use as a guide for students. It is complete and makes an acceptable addition to the excellent "Leather Bound" series. Gynecology is given a place in this book, as it should be, and is well considered. The illustrations are well selected, and the text is clear and concise.

THE MEDICAL AND SURGICAL USES OF ELECTRICITY, INCLUDING THE X-RAY, PHOTO-THERAPY, THE FINSSEN LIGHT, VIBRATORY THERAPEUTICS, HIGH FREQUENCY CURRENTS, AND RADIO-ACTIVITY. By A. D. Rockwell, A. M., M. D., Neurologist and Electro-Therapist to the Flushing Hospital; formerly Professor of Electro-Therapeutics in the New York Post-Graduate Medical School and Hospital; Fellow of the New York Academy of Medicine; Member of the American Academy of Medicine, etc., with 259 illustrations. New Edition, revised and enlarged. E. B. Treat & Company, New York, Publishers, 1907. Price, \$5.00. 666 pages.

This is practically a new edition of the old work of Beard and Rockwell on the same subject. The additional sections on x-ray diagnosis and therapy, light therapy, vibratory therapeutics and high frequency currents brings it fully abreast of the times. The detailed consideration of electro-physics, electrophysiology, electro-therapy, electro-surgery, Roentgen rays, Finsen light, etc., places this volume as one of the most extensive of its kind extant. It is a book that is more applicable to the uses of electro-therapeutists and specialists than to the general practitioner.

HINTS ON THE MANAGEMENT OF THE COMMONER INFECTIONS. By R. W. Marsden, M. D., M. R. C. P., D. P. H., Honorary Physician to the Ancoats Hospital, Manchester; Honorary Assistant Physician to the Manchester Hospital for Consumption; formerly Medical Superintendent, Monsall Fever Hospital, and Clinical Lecturer on Infectious Diseases, Owens College. E. B. Treat & Company, New York, Publishers. Price \$1.50, 1907. Pages 128.

This little volume, dealing with the treatment of the commoner infections, considers both the general and specific indications of these diseases in a very direct and practical manner. Unnecessary theories and methods not absolutely established at the present time are entirely eliminated. The fact that it considers only recognized therapy which has been accepted as actually producing beneficial results in the hands of many authorities makes it a ready reference for this kind of information.

PHARMACOLOGY AND THERAPEUTICS. By R. W. Wilcox, M. A., M. D., LL.D., Professor of Medicine at the New York Post-Graduate School and Hospital; Consulting Physician to the Nassau Hospital, etc. Seventh Edition, 1907, Revised, with Index of Symptoms and Diseases. Price, \$3.00 net. P. Blakiston's Son & Co., 1012 Walnut street, Philadelphia, Publishers.

This is the seventh edition of the well-known work of the author. It is a companion book of *Materia Medica* and *Pharmacy*, by the same author. The same general plan and classification have been followed as in the previous editions, and the volume successfully meets the advances of the later times. The previous editions are so well known that favorable comment upon this one is unnecessary.

THE PRACTICE OF OBSTETRICS. By American Authors. Edited by Charles Jewett, M. D., Professor of Obstetrics in the Long Island College Hospital, Brooklyn, N. Y. In one handsome octavo volume of 786 pages, with 445 engravings in black and colors and 36 full-page colored plates. Cloth, \$5.00 net; leather, \$6.00 net; half morocco, \$6.50 net. Lea Brothers & Co., New York and Philadelphia.

With great satisfaction we record the appearance of a third edition of Jewett's *Practice of Obstetrics*. As the publishers correctly state, it is quite rare an occurrence to find a work of composite authorship appearing in successive new editions. This fact in itself seems satisfactory proof that this is a text-book of high quality. Dr. Jewett and his co-authors have again revised their work and brought it up-to-date.

THE PUERPERIUM. By C. Nepean Longridge, M. D., F. R. C. S., M. R. C. P., Pathologist and Registrar, Late Medical Resident Officer at Queen Charlotte's Lying-in Hospital. London, Adlard & Son. Price, sh. 5.

This little volume of 272 pages offers a complete description of the management of the lying-in woman and the new born child as carried out in that model maternity, the Queen Charlotte's Lying-in Hospital of London. The book abounds in sound practical advice and must be welcome to student and practitioner, who has found out from experience that the average text-book of obstetrics deals with this essentially practical problem in an entirely too dogmatic and scientific manner.

PRACTICAL FEVER NURSING. By Edward C. Register. Illustrated. Pp. 352. Philadelphia and London: W. B. Saunders Co. 1907.

Since it confines itself to fever nursing, this volume is able to cover the subject thoroughly in a reasonable compass. In the discussion of each disease

a brief discussion of the etiology, symptomatology and diagnosis precedes the directions for nursing. The book contains all the nurse need know of the medical aspects of fevers besides adequate details regarding the nurse's duties. It will be found useful to practitioners as well as to those for whom it is primarily intended.

THE NEW HYGIENE. Three Lectures on the Prevention of Infectious Diseases. By Elie Metchnikoff. With Preface by E. Ray Lankester. Pp. 106. Chicago: W. T. Keener & Co. 1906.

So pleasant a task as the discussion of Prof. Metchnikoff's Harben lectures does not often fall to the lot of the reviewer. Written in a most delightful, anecdotal vein, they discuss entertainingly, if somewhat desultorily, a number of interesting hygienic problems. In the first lecture on The Hygiene of the Tissues, Metchnikoff calls attention to the present trend of opinion away from the more or less chemical views of immunity back to his own original theory of phagocytosis. This requires only the additional assumption of the presence in the blood serum of a substance called "sensitizer," which renders bacteria more readily edible by the phagocytes, to explain most of the phenomena of immunity. Practical use of this theory has been made by the French surgeon, Petit. He pours into the abdomen, at the close of a laparotomy, some thirty grammes of sterile horse-serum, with astonishing results, especially in pus cases. Similar results were obtained by Fernet in gangrenous pleurisy.

The second lecture on The Hygiene of the Alimentary Canal is concerned chiefly with the importance of intestinal parasites as the cause of various infections. Appendicitis, he believes, is often primarily due to an infection introduced by means of the bite of an intestinal worm, and strange as this view may seem, he is able to bring forward considerable evidence in its favor. In other respects, too, his views are radical. For bacteriologic reasons, he argues against the use of unboiled fruits and vegetables, and suggests a change in the constitution of the intestinal flora by means of the persistent ingestion of lactic acid bacilli, either in bulk or in sour milk. The last lecture is concerned with measures against syphilis and contains nothing novel.

A MANUAL OF CLINICAL DIAGNOSIS BY MEANS OF MICROSCOPIC AND CHEMICAL METHODS FOR STUDENTS, HOSPITAL PHYSICIANS AND PRACTITIONERS. By Charles E. Simon, B. A., M. D., Sixth Edition. Fully illustrated. Pp. 682. Lea Brothers & Co., Philadelphia and New York. 1907.

The new edition brings Simon's useful text-book fully up to date. Many methods that have not proved useful have been omitted, whereas much has been added, especially in regard to blood work. The chapter on opsonins, in which the writer was a pioneer worker, is especially valuable. Two appendices have been added. One deals with the preparation of culture media and the other represents an outline of a course in clinical laboratory methods that will prove especially useful to teachers of this subject. An extensive index adds greatly to the value of the volume. The proofreading is not beyond reproach.

A TEXT-BOOK OF PHYSIOLOGY FOR MEDICAL STUDENTS AND PHYSICIANS. By W. H. Howell, Ph.D., M. D., LL.D., Professor of Physiology in the Johns Hopkins University, Baltimore. Second Edition. 1907. Thoroughly Revised. Octavo Volume, 939 pages. Price: Cloth, \$4.00 net. W. B. Saunders Company, Philadelphia and London, Publishers.

The practicing physician is coming to utilize more and more the practical application of the principles of physiology in diagnosis and treatment. Realizing the absolute dependence upon the elements of physiology, as well as those of anatomy and pathology, clinicians are directing their attention more and more to the importance of a proper training in physiology as a basis for the more exact science of clinical medicine. A review of this text substantiates the purpose of the edition which the author advocates in his preface, summarized as follows: No fundamental changes in the arrangement or scope of the second edition have been made. The additions and changes keep the presentation of the subject abreast of the times, but as far as possible have been counterbalanced by eliminating unnecessary material. The book remains, therefore, practically the same size as the first edition. And the revisions greatly improve the very excellent first edition. It will bear the closest scrutiny of the critics, and can be unhesitatingly recommended as a scientific text and practical reference.

THE PHYSIOLOGY OF ALIMENTATION. By Dr. M. H. Fischer, Professor of Pathology in the Oakland College of Medicine. First Edition, 1907, First Thousand. 12mo. Pp. 348. Price, \$2.00 net. John Wiley & Sons, New York; Chapman & Hall, London, Limited, Publishers.

This volume is one of the first of its kind dealing with the compilation of the original research work done upon one physiological system. It is remarkable for its exhaustive review of the literature upon the physiology of the gastrointestinal tract. The manner in which the immense amount of work done upon this system is woven together, and the clearness with which deductions are made from the results of independent workers in this field, make it an especially valuable work for those interested in experimental research. For the above reasons it will also be an exceedingly convenient reference for all those who wish to be informed upon the special research work of the gastrointestinal tract.

A TEXT-BOOK OF PHYSIOLOGICAL CHEMISTRY FOR STUDENTS OF MEDICINE AND PHYSICIANS. By C. E. Simon, B. A., M. D., Professor of Clinical Pathology at the Baltimore Medical College. Third Edition, 1907. Thoroughly Revised. Quarto volume. 473 pages. Lea Brothers & Co., Philadelphia and New York, Publishers.

This volume is the third edition of the author's already established text-book on physiological chemistry. The revisions made by it fulfill the developments in this science, and the text will continue to be recognized as the standard one in this branch of the sciences.

BEITRAGE ZUR KLINIK DER TUBERKULOSE, herausgegeben von Dr. Ludwig Brauer. Band VII, Heft 1-4. Wuerzburg. A. Stuber's Verlag (Curt Kabitzsch). 1907.

This journal appears in occasional issues, of which three to five form a volume. Subscribers receive the corresponding Centralblatt gratis.

INTERSTATE MEDICAL JOURNAL

PUBLISHED ON THE FIRST DAY OF EVERY MONTH BY THE
INTERSTATE MEDICAL JOURNAL COMPANY.

SUBSCRIPTION, \$2.00.

FOREIGN SUBSCRIPTION, \$2.50.

SINGLE COPY, 25c

Subscriptions may begin at any time. Volume ends with issue of December.

Original Articles.—Articles are accepted for publication with the understanding that they are contributed solely to this journal. French and German articles will be received and translated free of charge, if found desirable for publication.

Reprints (200) of original articles will be furnished gratis to authors making the request, which must accompany the manuscript. Covers to these, and extra reprints, will be furnished at net cost.

Illustrations, such as plates, half-tones and zinc etchings, as in the judgment of the editors are necessary to illustrate articles, will be furnished when photographs or drawings are supplied by the author.

Manuscripts will be returned, if stamps be sent for this purpose.

Advertisements.—First advertising form closes on the 10th of the month; last advertising form closes on the 15th. Time should be allowed for composition of advertisements and for the sending and return of

proofs. Advertising rates will be sent on application.

Change of Address.—In ordering a change of address, it is important that both the old and new addresses be given.

Discontinuances.—The INTERSTATE MEDICAL JOURNAL is not discontinued at expiration of subscription, but is sent until an explicit order to stop is received or a notice sent by us. A large majority of our subscribers prefer not to have subscriptions interrupted and files broken in case they fail to remit before expiration. It is therefore assumed, unless notice to discontinue is received and the amount of back subscription paid to date, that the subscriber wishes no interruption in his series. Journals returned are not notice of discontinuance.

Remittances should be made by check, draft, registered letter, money or express order. Address all communications to INTERSTATE MEDICAL JOURNAL, Linmar Building, St. Louis, Mo.

INDEX.

Subject	A	Author	Page
Abdominal incisions, experimental.....		Murphy.....	480
Abdominal surgery without detached pads or sponges.....		Crossen	751
Abortion, tubal, detachment of foetus.....		Elbrecht.....	458
Abscess, hepatic, diagnosis of.....		Axisa.....	632
Abscesses, tuberculous, treatment of.....		Starr.....	339
Acetone in urine.....		Jackson-taylor.....	546
Acne, treatment of.....		Biddle.....	653
Albumen		Sachs.....	414
prostatic		Ballinger.....	341
Albuminuria of the newly born.....		Gundobin.....	957
orthotic		Heubner.....	322
Alcohol and insanity.....		Mott.....	716
Alcohol and the infant.....			754
Alcohol in obstetric and gynecologic practice....		Theinaber	416
Alcohol, verities of.....		Editorial.....	509
Alimentary intoxication		Kinkelstein.....	958
Alopecia, syphilitic		Klotz.....	568
Amblyopia			494, 798
American physicians and distortion of truth.....		Editorial.....	367
Ammonium oxalate in blood culture technique....		Epstein.....	845
Anastomosis, new method of lateral.....		Werelins.....	337
Anemia in brain and skull surgery.....		Dawborn.....	419
pernicious		Gulland.....	697
sequestration in brain and skull surgery....		Dawborn.....	419
Aneurism, cure by a new method.....		Burghard & Pritchard....	719
Announcement		Editorial.....	1
Anti-bacterial sera.....		Brown.....	404
Antiglokusine			701
Aorta, occlusion by metal bands.....		Halsted	336
Aortic insufficiency, dicrotic pulse in.....		Janowski.....	698
Appendicitis.			659
a diagnostic symptom.....		Blumber.....	773
in childhood			488, 646
in negro		Royster.....	419
leucocytosis in		Kothe.....	849
Arch, longitudinal, of foot.....		Hoffman.....	679
Argyll-Robertson phenomenon, prognostic im- portance of.....		Pilz.....	426
Arsenic inhalations, use of.....		Saenger.....	477
Arterial degeneration, experimental.....		Miller.....	471
Arteries, coronary		Hirsch and Spalteholz.....	627
Arteriosclerosis			428, 539
diagnostic eye findings.....		Sulker.....	428
treatment of		Senator.....	476
Arteriovenous aneiorrhapy		Lilienthal.....	481
Arthritis deformans.....		Hoffa.....	639
gonorrhoeal, etiological factors of.....		Smith.....	532
Arthroplasty upon elbow joint.....		Scudder.....	552
Artificial joints, ligaments of silk.....		Lange.....	706
sterilization of women.....		Offergeld.....	488
Aspirin in rheumatism.....			634
Assimilation, influence of.....		Rahn.....	410

Subject	Author	Page
Asthma	Smith	800
Asthmatic patients, blood examination of	Salecker	540
Atoxyl, toxicology of	Blumenthal and Jacoby	780
Aural affections in relation to mental disturbances	Bryant	495
Automatism, ambulating	Patrick	871
Avenue Louis Pasteur	Editorial	269

B

Backache and gynecologic troubles	Lomer	559
Bacteria, action of sunlight upon	Weinzierl	627
Baldness, cause of	Parker	497
Basedow's disease	Mosse	348
complication of	Mosse	323
Belching, nervous	Adler	417
Bier's stasis hyperemia	Seelig	989
Bladder and its relation to prostatectomy	Ball	424
sarcoma of	Whiteside	707
Bladder, sphincteric control of, relations to prostatectomy	Ball	424
ulcer of	Walker	485
Blastomycetes of genitalia	Vandervelde	1014
Blennorrhagia in the incubative period, diagnosis of	Griffon	485
Blind, city for the		565
Blood formation in anaemia	Morris	769
examination of, in diagnosis of lead poisoning	Neer	838
pressure, auscultatory determination	Fellner and Janowski	698
vessels, suture of	Watts	627
Book reviews	359, 505, 572, 736, 815	884
Bovine bacilli, infection of man with	Weber	327
Brain, Hughlings-Jackson number of		647
puncture	Pollack	948
Bright's disease, hemorrhage in	Riesmann	999
Bronchophony of the whispering voice	Masing	851
Buphthalmus	Abadie	1017
Bursitis, subdeltoid	Painter	636

C

Cæsarian section in cervical carcinoma	Buettner	643
in eclampsia	Buettner	643
in placenta previa	Buettner	643
Calculus, renal	Robertson	443
vesical	Swinburne	425
Cancer	Graves	415
absence of hydrochloric acid in	Friedenwald et al.	844
gastric	Schupier	414
early diagnosis of	Albu	329
Salomon's test	Schupfer	414
mammary	Schen	421
statistics and cure of	Schen	421
of bladder	Cabot	1014
of breast, and results in operation	Dennis	858
of stomach	Hoffmann	634
research in	Copeman	1008
trypsin treatment of	Graves	415
Carbolic acid poisoning by rectal injection	Acker	714

Subject	Author	Page
Carcinoma in mice.....	Cowles	543
of appendix.....	Grunbaum	844
of breast.....	Meyer	857, 868
of breast, operation for.....	Halsted	856
of stomach and esophagus.....	Rollaston	939
of stomach and intestines.....	Wiley	939
of stomach, diagnosis of.....	.....	323, 691
Cardiac boundaries, true percussion of.....	Moritz	329
stimulants	Hare	946
Care of skin and cosmetics.....	Michel	418
Caruncle, perforation for.....	Boley	960
Cataract, little known form of.....	Purtscher	361
secondary .....	.....	651, 960
vitreous humor in, operation for.....	Ray	651
with bandage.....	Wilder	650
Catarrh, treatment of.....	Rosenheim	331
Catgut, silverized.....	Blake	552
Cerebro-spinal fluid, straining of.....	Pappenheim	473
Cervical vertebrae, dislocation of.....	Krauss	419
Charity, misapplied.....	Editorial	588
Cheyne-Stokes respiration in nephritides.....	.....	1013
Children, impressionability of.....	Baginsky	561
mistaken interpretation of a physical sign in	Neumann	474
normal, impaired resonance in.....	Hamill	561
Chloral, action on heart and blood vessels.....	Mayor	633
Cholera, hog, etiology of.....	Dorset	468
Chorea during pregnancy.....	Shaw	558
relapsing in childhood.....	Lazzaret	647
Chorion-epithelioma	Walthard	644
City hospital.....	Editorial	369
Clemenceau and prevention of tuberculosis.....	.....	658
Climate of New Mexico.....	Fest	535
Clinical laboratory, importance of.....	Editorial	886
Colic, gall-stone.....	Ewald	414
Congenital amblyopia, central scotoma in.....	Scrinì and Fortin.....	494
luxation of hip, reduction of.....	Davis	482
Congestion in ophthalmology.....	Hesse	1018
Congress and the medical profession.....	Editorial	975
Conjunctiva, hard chancre of.....	Aubineau	871
Consanguinity, influence on children.....	Feer	1017
Cornea, transplantation of.....	Zirm	493
Corneal changes due to mucin.....	Collins	719
Corpuscles	Tuerk	413
Constipation, treatment of.....	Schmidt	332
Consumption, subcutaneous injections of oils in.....	Keyes	633
Coxa valga.....	Galeazzi	340
congenital	Drehmann	861
Coxitis, pathology of.....	Werndorff	861
Cranial injuries, consequences of.....	Cushing	702
Craniotabes	Ancouturier	1016
Cross-eyed child, plea for.....	Green	917
Cupric hydrate in urine.....	Reale	547
Cystotomy, suprapubic.....	Belfield	342

D

Deaf, educational treatment of.....	Love	962
Deafness, prevention of.....	Scheppegegrell	873

Subject	Author	Page
Deasyme		701
Delirium tremens, treatment of.....	Ganser	417
Dementia, amaurotic.....	Mott	717
præcox		490, 585
Dental arches, relation to affections of the naso- pharynx	Bogue	874
Deprine		702
Dermatology and syphilis.....	Engman	256
Diabetes mellitus, neuritis in.....	Williamson	796
surgery in.....	Wiener	704
Diagnosis	Taussig	31
of appendicitis in the child, errors of.....	Barillet	793
of enlarged prostate.....	MacGowan	789
of enlarged bronchial glands.....	Boujarel	793
of gastric and intestinal disease.....	Jollasse	944
of tuberculosis.....	Solis-Cohen	944
of pulmonary tuberculosis.....	Tatusescu	945
of tuberculosis, ophtharmo-reaction of tuber- culin in.....	Calmette	872
of urogenital tuberculosis.....	Rolly	850
Diet of the sick—A study in nationalism.....	Editorial	889
in tuberculosis.....	White	999
salt-free, in nephritis.....	Peabody	540
vegetable or meat, in hyperacidity.....	Schloss	769
Difficulties in antimalarial treatment.....	Editorial	818
Digestive disorders, surgical aspect of.....	Arneill	691
ferments	Sollmann	333
Diphtheritic relapses and measles.....	Barbier	793
Diplococcus intracellularis, biology of.....	Flexner	470
Dislocations of cartilages of knee.....	Dambrin	786
Disease, English.....	Rickets	418
prevention of.....	Field	475
serum-therapy of.....	Kolle	545
Dorimol, action on heart and blood vessels.....	Mayor	633
Draconian social laws.....	Editorial	743
Dried milk as an infant food.....	Hussy	714
Duodenal ulcer, perforating.....	Gray	698
Dyspepsia, intestinal.....	Einhorn	999

E

Ear, middle, treatment of, suppuration of.....	Stucky	430
Eclampsia, treatment of.....	Hirst	548
Eclipse scotoma.....	Aubaret	718
Ectopic pregnancy, uterine decidua in.....	W. H. Schultze.....	792
Eczema, treatment of.....	Biddle	653
Eclampic infants in later childhood.....	Thiemich and Birk.....	489
Edema in newly-born.....	d'Astros	1016
Ehrlich's reaction in typhoid fever.....	Genken	693
Elbow joint, arthroplasty upon.....	Scudder	552
Empyema of antrum of Highmore.....	Rethi	352
Enteroptosis, Glenard's belt in.....	Strasser	700
treatment of.....	Strasser	700
Endometrium and chronic endometritis.....	Theilhaber	696
English disease, treatment of.....	Rickets	418
Eosinophiles in blood, diagnostic value of.....	Blumgart	546
Epidemiology	Editorial	374
Epilepsy in childhood.....	Keeling	645

Subject	Author	Page
Epileptic dementia in childhood and adolescence	Voisin	869
Epiphysis of head of femur, injury and deformity of	Cheyne	483
Epithelioma of the skin, treatment of	Bizard	497
Erosions, treatment of	Bass	466
Erysipelas		550
Esophagus, mouth of	Killian	1019
Esperanto	Editorial	972
Eternal truth or everlasting doubt	Editorial	666
Euthanasia, nurse's idea of	Editorial	970
Exercises, Nebuchadnezzar	Editorial	589
Expert medical witness in France	Editorial	507
opinion, basis of		1020
Experts, compensation for testimony of		801
qualifications of		569
Eye, electric heater for	Hoffman	494
Eyeball, enucleation of, under local anesthesia	Bruns and Robin	428

F

Femininism versus tobacco	Editorial	511
Fetus, development of	Merletti	344
Fever, shall we treat	Kraus	700
Fevers, long continued	Cabot	943
Fibrolysin, therapeutics of	Pope	1005
Fistula of pancreas, treatment of	Heineke	554
Flatfoot, treatment	Scaphoid	706
Fletcherism	Editorial	439
Foot, functions of, relation of longitudinal arch to	Hoffmann	679
weak, causes and characteristics of	Whitman	860
weak, treatment	Keppler	705
Fractures	Barker	384
of leg, dressing of	Desguin	555
massage in	Cathcart	1011
nonunion or vicious union of	Barker	384
operative treatment	Vaughan	423
Frontal sinus, safe operation on	Good	873

G

Gall-stone colic, simulation of	Ewald	414
Ganglion geniculate, herpetic inflammations of	Hunt	426
Gas-forming bacillus	Loving	686
Gastric acidity	Prym	850
contents, hyperacid	Rubow	414
secretion in old people	Liefschuetz	545
ulcer	Tecklenberg	323
Gastrica achylia	Schuetz	623
Geniculate ganglion, herpetic inflammations of	Hunt	426
Genito-urinary surgery	Johnson	163
Glands, lymphatic, spirochaete in	White et al.	1002
Glans, tubercular, treatment by x-ray	Feldstein	332
Gonococic conjunctivitis, treatment of	De Schweinitz	351
Gonococcus, culture of	Abe	1003
Gonorrheal arthritis, etiological factors of	Smith	532
joint disease	Nathan	555
myositis	Cumston	788
peritonitis	Goodman	707
peritonitis in the male	Thomas	557
pus in staining sera	Farve	953

Subject	Author	Page
Granuloma, coccidioidal.....	Brown	568
Guenzburg's test.....	Steensma	414
Gynecology and obstetrics.....	Ehrenfest	177
Gui Patin's letters.....	Editorial	583

H

Haeckel and evolution.....		813
Harelip and cleft palate in infants.....	Brown	420
Hay fever, diphtheria antitoxin in.....	Reuter	851
treatment of.....	Curtis	652
treatment of.....	Borrowman	332
Hearing	Bryant	430
preservation of.....	Bryant	430
Heart action.....	Rumpf	407
disease, tonics in.....	Brunton	548
force, method of determining.....	Hoke and Mende.....	467
examination of.....	Stern	631
percussion of.....	Goldscheider	629
Hedonal, action on heart and blood vessels.....	Mayor	633
Heller's test for albumin, simplification of.....	Sachs	414
Hemangioma cavernosum.....	Reder	377
Hemoptysis due to mitral stenosis.....	Schwartz	698
Hemorrhage, suprarenal.....	Munson	709
Hernia, femoral, new operation.....		1009
Herpes simplex in infectious diseases.....	Schamberg	432
Hip, congenital anterior dislocation of.....	Ryerson	556
disease, treatment of.....	Calot	787
Hospitals, recognition of services rendered.....	Editorial	974
Hydrocephalus complicating cerebro-spinal men- ingitis	Koplik	491
Hydronephrosis, study of.....	Cabot	277
Hyperemesis gravidarum.....	Baisch	559
Hyperemia, passive, in delayed union of fractures.....	Roberts	952
Hypertonus, temporary.....	Dufour	1017
Hypertrophy of prostate, treatment of.....	Tansard and Fleig.....	241
Hyperchlorhydria, treatment of.....	Ribizzi	548
Hypopion, treatment of.....	Rollet and Moreau.....	564
Hypospadias, new operation.....	Buckwell	1013
Hysteria	Dana	492
and evolution.....		882
knee jerk in.....	Wygang	562

I

Ichthyol	Kegel	415
therapeutic value of.....	Kegel	415
Icterus, agglutination reaction in.....	Christian	539
neonatorum	Knoepfelmacher	624
Indicanuria, etiology and significance.....	Porter	692
Infantile gastro-enteritis.....	Boischut	646
Infant mortality in Manila.....	Shattuck	400
Infants, enlargement of lymphnodes in.....	Hess	868
pseudomasturbation in.....	Rachford	867
Infancy, disease of naso-pharynx in.....	Morse	567
Infection of eye, prevention of.....	Dor	565
Inflammation, magnesium sulphate in.....	Tucker	636
Injury, intracranial.....	Phelps	337
Insane, diphtheroid organisms in throats of.....	Eyer-Flashman	716

Subject	Author	Page
Insane, trial of, for crime.....	Lloyd	870
Intestinal infection, relation to visceral tubercu- losis	Whipple	941
Intestines, new method of closure.....	Flint	336
Internal medicine.....	Myer	5
Intratympanic operations.....	Ballin	1019
Intravenous injections.....	Hahn	332
Iodine, relation to parathyroid.....	Estis and Cecil.....	940
Iron therapy.....	Laspeyres	1006
Isopral, action on heart and blood vessels.....	Mayor	633

J

Jejunostomy, new method of.....	Chevier	335
Journalists, remarks about.....		1029

K

Keratitis, superficial dendriform.....	Pretori	798
treatment of.....	Francis	720
Kidney affections, diet in.....	Hanssen	851
lipo and lipo-sarcoma of.....	Hartwig	425
massage	Cowie	408
mobile	Bishop	864
Knee, fixation in excision of.....	Kofmann	784
jerk, methods of reinforcing.....	Rosenbach	413
joint, drainage of.....	Peck	423
joint, internal derangement of.....	Freeman	706
Koch's bacilli emulsion.....		479

L

Labor, time of leaving bed.....	Bouchacourt	866
ventral bandage during.....	Vallee	865
Lachrymal passages, affections of.....	Osborne	350
Lagophthalmus, treatment of.....	Francis	720
Laryngology and otology.....	Sauer	236
Leucocytosis in severe infections.....	Hirschfield and Klothe..	849
Leukemia	Capps and Smith.....	326
Roentgen treatment of.....	Maragliano	331
Lever, Charles.....	Editorial	273
Liability of father for services rendered son.....		722
Limitations, statute of.....		571
Literary notes.....	144, 276, 375, 442, 516, 592, 669, 748, 822, 896, 977	
Liver extract and uric acid.....	Stookey	854
London letter.....	804, 878, 963, 1022	
Lumbar puncture, diagnostic value of.....	Pomeroy	563
Lupus vulgaris, treatment of.....	Willmot	498
Lymphosarcoma	McCallum	1003

M

Malaria, antitoxin treatment of.....	Ford	331
congenital.....	Pezopoulos and Cardamatis.	489
Malignancy of larynx, early diagnosis of.....	Stein	496
Malpractice, degree of care required.....	Warford	656
Mammary gland, resection of.....	Warren	704
Massage in treatment of fractures.....	Cathcart	1011
Mastoid operation, the radical.....	Bryant	800
Measles, unusual transmission of.....	Bleyer	621
Medical career and intellectual life.....	Wood	671

Subject	Author	Page
Medical department of United States Army.....	Editorial	433
men, influence on human progress.....	Butler'	897
education	Editorial	441
education, medieval.....	Walsh	763
inspection of school children.....	Editorial	373
journalism, trend of.....	.....	1
papers, composition of.....	Editorial	885
Medicine and the natural sciences.....	.....	1031
and surgery in the Russo-Japanese war.....	Lynch	928
Meningitis, cerebro-spinal.....	Rundle, Mottran and Williams.....	852
epidemic cerebro-spinal.....	Fowler	563
eye symptoms in.....	Ballantyne	849
Mental conditions.....	.....	354
Mesenchym and the germinal layers.....	Voit	846
Metrorrhagia, syphilitic.....	.....	486, 791
Microscope in general practice.....	Taussig	923
Milk, acidified.....	Morse and Bowditch.....	347
Moebius, Paul Julius.....	Editorial	271
Morphin and the alimentary canal.....	Magnus	853
Motors for medical men.....	Editorial	668
Muscles, heart.....	Hirsch and Spalteholz....	627
recti	Howe	351
Myasthenia gravis.....	Borgherini	649
Myatonia congenita.....	Bernhardt	349
Myocarditis, gummous.....	Tatuschesu	473

N

Napoleon as seen by a psychiatrist.....	Editorial	274
Nasal affections, mental symptoms in.....	Fridenberg	799
mucosa, cauterization of.....	Killian	653
Necrosis, experimental study of.....	Silver	340
Nephritides	Cuneston	1013
Nephritis, salt-free diet in.....	Peabody	474
hematuria of.....	Chute	557
Neurology and psychiatry.....	Schwab	213
Neurosis, simulating gall-stone colic.....	Ewald	414
Nicotine effect on cardio-vascular system.....	Grassmann	632
Nourishment of sick.....	Rodari	418
Nun's murmur.....	Wiedemann	473
Nurses, state law for registration of.....	Editorial	365
Nursling, temperature of.....	Nobecourt and Merklen..	869

O

Operation, absence of consent.....	.....	501
for infection with a gas-forming bacillus.....	Loving	685
for prolapse.....	Scharpenack	1015
Ophthalmia, treatment of.....	Oliver	1018
Opsonic index in erysipelas.....	Schorer	1000
Opsonins	Simon et al.....	324
Wright's	Loehlein	770
Opium in perityphlitis.....	Pel	845
Ophthalmology	Green	110
Optico-ciliary neurectomy.....	Elliott	494
Oracle of Epidaurus.....	.....	733
Orthopedic surgery.....	Allison	129
Os calcis, extostosis in plantar portion of.....	Bradford	556
Otitic pyemia.....	Zebrowski	429

Subject	Author	Page
Otitic pyemia, treatment of.....	Zebrowski	429
Oxypepsin		702

P

Palsy, transbrachial anastomosis for.....	Babcock	637
Pain due to organic and psychic causes.....	Coppioli	629
Pancreatic disease, test for.....	Cummidge	774
Paraffin, method of using.....	Large	567
Paralysis and tabes dorsalis.....	M'Rae	795
infantile, prevention of deformity after.....	Judson	859
Landry's	Sheppard Hall.....	870
Paris letter.....	729, 810, 880, 965, 1024	
Pasteur and the popular vote.....	Editorial	437
Pathological laboratory, London asylum.....	Essex	715
Pathology and bacteriology.....	Fisch	71
Pediatrics	Friedlander	97
Pemphigus vegetans.....	Winfield	499
Penology, a new.....	Editorial	141
Pepsin, method of estimating.....	Liebman	851
Pernicious anemia.....	Plehn	772
Peritoneal cavity, absorption from.....	Buxton	472
Peritonitis following appendicitis.....	Fowler	1010
Peritonitis, treatment of.....	Blake	637
Petit mal.....	Seglas	349
Peyer, his life and works.....	Taussig	463
Phantoms of the imagination.....	Editorial	746
Philippine Islands, water supplies of.....	Long	450
Philippines, letter from.....	727, 806, 1026	
Phlebitis, otitic.....	McKernon	1018
Phthisiotherapy	Meyer	940
Phthisis, diabetic.....	Thorspecken	407
pulmonum and abortus provocatus.....	van Amstel.....	710
Physical deterioration among city poor.....	Editorial	270
Placenta, adherent, hysterectomy in.....	Santucci	664
previa, statistics concerning.....	Buerger and Graf.....	559
Plague in Japan.....	Kitasato	599
Plaster of Paris, setting of.....	Stern	638
Pleurisy, Grocco's triangle in.....	Padoa	945
Polyuria in diabetes.....	Teschemacher	467
Pott's disease.....	Reily	482
Pneumonia, abortive treatment.....	Curtis	476
acute lobar, in childhood.....	Hayem	489
cardiac tonics in.....	Brunton	548
diagnosis of, in childhood.....	Weill and Thevenot.....	794
in children.....	Worster	416
lobar, as a complication of diphtheria.....	Rolleston	346
practical phenomena as therapeutic indica- tions in.....	Editorial	894
Pneumaturia	Taussig	692
Pneumococcus infection in animals.....	Selter	471
peritonitis	Koos	957
Porier, Paul.....		658
Pragmatism	Editorial	820
Pregnancy after loss of one kidney.....	Ferguson	486
chorea during.....	Shaw	558
extrauterine	Lassaud and Wertneim..	587
Progeny of derided mysticism.....	Editorial	664
Prolapse, operations for.....	Scharpenack	1015

Prostate, diagnosis of diseases of.....	Ballenger	640
enlargement of.....	Martin	790
Prostatic abscesses, drainage of.....	Lusk	342
congestion, treatment of.....	Bolton	557
Prostatectomy	Castano	556
perineal, new method.....	Hill	708
suprapubic and perineal.....	Pousson	484
Protozoa as factors in disease.....	Stiles	541
Pruritus, pilocarpin for relief of.....	Reid	634
Psoriasis, treatment of.....	Biddle	654
Psychoanalytic method of Freud.....	Sadger	427
Psychotherapy	Bliss	287
Pubiotomy, subcutaneous.....	Kannegiesser	865
Pyelonephritis, acute unilateral septic.....	Eisendrath	336
diagnosis of.....	Beer	641
infectious, treatment of.....	Juy	708
Pylorectomy for benign stenosis.....	Biechot	784
Pylorus, functions after gastroenterostomy.....	Diggett et al.....	1010
stenosis of.....	Schitomirsky	417
Pylorospasm	Wemstedt	792

Q

Quackery, abolition of.....	Editorial	512
-----------------------------	-----------------	-----

R

Rectum, instrumental examination of.....	Tuttle	407
Red blood corpuscles, color index of.....	Tuerk	413
Reed, Carroll and Lazear.....	Editorial	893
Regicides, the.....	.....	732
Regrettable exaggerations: teetotalers and Lierschuetz .....	.....	545
Renal diagnosis, functional.....	Gruenwald	328
disease, diagnosis of.....	Schlesinger	329
hematuria, unilateral.....	Young	640
Resurrection days.....	Frank	293
Rheumatism, aspirin and sodium salicylate in.....	Roch, Geanneret et al.....	634
chronic articular.....	Hoffa	639
Rhinitis, treatment of.....	Ingalls and Friedberg.....	720
Road to Yesterday.....	Editorial	514
Rupture of Descemet's membrane.....	Alt	959

S

Salt-free diet in nephritis.....	Peabody	474
Santonin	Journet	855
Sarcomata	Borst	409
classification of.....	Borst	409
of mice, metastases in.....	Haaland	409
Saunders' disease, alimentary intoxication (Finkelstein)	Zahorsky	756
Scarlatina, iodophilia in.....	Neutra	413
in Duke's disease.....	Cotton	1004
Scarlet fever, treated with chloral-hydrate.....	Royer	333
measles superimposed on.....	Eaton	715
Scientific books as evidence.....	.....	500
Sclerosis of vessels.....	Pankow	487
Scoliosis caused by injury of abdominal muscles.....	Ryerson	482
Scurvy, infantile.....	La Petra	713
Sera, anti-bacterial.....	Brown	404
Serum anaphylaxis in guinea-pig.....	Gay and Southard.....	693

Subject	Author	Page
Serum anaphylaxis, diagnosis in lues.....	Fornet	770
for eclampsia.....	.....	702
for meningitis.....	.....	702
Sex of the fetus.....	Peham	791
Shakespeare in medicine.....	Editorial	370
Sick, nourishment of.....	Rodari	418
Sinuses, nasal accessory.....	Stucky	353
Skin, care of.....	Michel	418
Skull, fracture of.....	Crandon and Wilson.....	420
Sleep, defense of the advocates of.....	.....	812
Sleeping sickness, relation to syphilitic lesions....	Mott	794
Society proceedings.....	.....	358, 503
Specialists, grip of.....	Editorial	969
Spermatocele, diagnosis of.....	Whitney	642
Spermocystitis, gonorrheal.....	Aronstam	1012
Spine, lateral curvature of.....	LeBreton	638
Spirits and drugs, effect on upper air passages....	Crothers	799
Spirochæte pallida.....	Arning and Klein.....	942, 1004
Splanchnoptosis, surgical treatment of.....	Davis	479
Splenic anemia in childhood.....	Labbe and Aubertin.....	560
in lymphatic glands.....	White et al.....	1002
Sputum, macroscopic examination of.....	Goodman	850
Staphylase doyen.....	.....	702
Stasis hyperemia (Bier).....	Seelig	988
Stenosis of the pylorus.....	Schitomirsky	417
St. Louis Courier of Medicine and Interstate Medi- cal Journal.....	Editorial	583
Stomach, acute dilatation of.....	.....	517, 553, 939
benign lesions of.....	Monroe	783
cancer of.....	Hoffman	634
contents into duodenum, passage of.....	Kehrer et al.....	408
heredity in ulcer of.....	Huber	408
non-malignant disease of.....	Moynihan	781
operations on.....	Bartlett	390
pathological mucous production in.....	Schuetze	466
surgery	Ochsner	979
ulcer of.....	Huber	408
Struma, treated by iodipin.....	Mollo	550
Stumbling in children.....	Tubby	952
Subcutaneous fat necrosis.....	Fabyan	941
Subdural hematoma, diagnosis and therapy of....	Kroenlein	481
Suppuration of the middle ear.....	.....	430, 566
Suprarenal glands in disease.....	Mott-Halliburton	795
Suprarenin in obstetric practice.....	Max Neu.....	791
intravenous injection of.....	Kaiserling	328
Surgery	Bartlett	47
among the Chinese.....	Tee Han Kee.....	313
of thoracic duct.....	DeForest	1009
Surgeon's power of life and death.....	Editorial	142
Surgical shop, the.....	Editorial	436
Syphilis, diagnosis of.....	Saxe	346
in monkeys.....	Finger and Landsteiner..	411
of heart.....	Herzog	845
overtreatment of.....	Bryce	431
treatment of.....	.....	1030
Wassermann reaction.....	Editorial	817
Syphilitic antibodies in paralysis and tabes.....	Marie and Levaditi.....	544

Subject	T	Author	Page
Tannosplenofferin			702
Test for sugar			412, 631
for tuberculous pus		Mueller	850
of gastric motility		Strauss and Leva	944
Testicles, tuberculosis of		Keyes	710
Testimony, expert, as to cause of death			356
Tetanus antitoxin			702
in inoculated rats, local immunity to		Noguchi	625
Tetany, epidemiology of		Mattauschek	624
Therapeutics		Engelbach	145
Thiosinamin in sclerosis		Renon	947
Thoracic duct, surgery of		DeForest	1009
Throat diseases		VanBaggan	352
Thrombosis, optic neuritis in		Langworthy	353
Thyroid, surgery of		Ferguson	703
Tonsil, diseases of		Campbell	721
faucial, tubercular infections of		Robertson	961
relation to infection and infectious diseases		Brown	495
Toxin, electrical charge of		Field and Teague	324
Trade-unionism in the profession		Editorial	3
Trachoma, surgical treatment of		Ryerson	429
Tragi-comedies in the practice of medicine		Editorial	819
Treatment of anemias		Sittmann	775
of angina pectoris		Weissbart	855
of ankylosis		Waglowksi	785
of constipation		Lewasdownski	777
of detachment of retina		Tourcoing	798
of dysentery		Curl	951
of exophthalmic goitre		Kocher	950
of headaches		Robinson	947
of paralysis by vaccines and antisera		Robertson	958
of renal and vesical conditions		Watson	865
of scoliosis		Klapp	861
of snake bites		Diesing	852
of surgical tuberculosis		Steward	785
of syphilis			1030
of torticollis		Bradford and Seaver	860
of tubercular sinuses		Sever	784
of tuberculous bone and joint disease		Carling	705
Trend of medical journalism		Editorial	1
Trigeminal nerve, functions of		Davies	870
Trypsin treatment of cancer		Graves	415
Tubercle bacilli by animal inoculation		Bloch	628
bacilli in the urine		Bloch	624
bacillus		Loeff	544
protein			702
Tubercular broncho-pneumonia in infancy, diag-			
nosis of		Mouriquand	560
orchitis		Barnett	343
Tuberculin denys			702
for diagnostic purposes		Lowenstein	473
preparation of Koch			477, 478
reaction		Pirquet	630
Tuberculosis		Mendel	417
Behring's new remedy			549
Bier's treatment of		Auffret	339
clinic for		Warfield	992

Subject	Author	Page
Tuberculosis, comparative investigations.....	Pfeiffer	1000
diet in.....	White	999
of air passages.....	Gruenberg	566
of lungs, diagnosis of.....	Pfoerringer and Bunz....	322
of testicles	Keyes	710
ontieopine-marigliano .....	.....	702
pulmonary	Burwinkel	418
pulmonary, cause and treatment.....	Burwinkel	418
pulmonary, diazo-reaction in.....	.....	329, 474
pulmonary, intratracheal therapy in.....	Mendel	417
relation of chorea with.....	Toutain	346
Tuberculous ascites, oxygen for.....	Schulze	949
Tumors, abdominal.....	Osler	641
benign, metastasis of.....	Borrmann	696
diagnosis of.....	Richardson	635
of bladder	Kolischer and Schmidt..	862
of the laryngopharynx.....	Chappell	962
of spinal cord.....	.....	348, 562
malignant nature of.....	Dungern and Liepzig....	847
malignant treatment of.....	Schirmer	540
resistance in mice.....	Haaland	695
thyroid	Barker	949
Turbinal hypertrophies, new method of operating.	Yankauer	496
Types of humanitarianism.....	Editorial	661
Typhoid bacilli, absorption of.....	Buxton	693
fever, blood cultures in.....	Rossen-Runge	547
fever, diet in.....	Burzagli	547
fever, methylene blue test.....	Rolleston	329
fever, perforation in.....	McPhedran	480
fever, relapses of, in children.....	Kaplik and Heiman.....	347
Typhlitis, primary without appendicitis.....	McWilliam	859

U

Ulcer, duodenal.....	Robson	546
gastric	Mayo	782
of bladder	Walker	485
of cornea	DeBardinis	565
of stomach, operation for perforation of.....	Korte	551
Unholy alliance.....	Editorial	515
Urethra, applying medication to.....	Gardner	342
Urethritis and complications.....	Peterkin	524
Urine, acetone in.....	Jacksontaylor	546
reducing power after administration of uro-	.....	.....
tropin	Abt	645
segregation by means of kidney massage.....	Cowie	408
Urobilinuria in typhus abdominalis.....	Rubin	623
Urotropin, reducing power of.....	.....	645
Uterus, cancer of.....	Milligan	345
carcinomatous	Blau	344
effect of drugs on.....	Cushny	701
pregnant, incarcerated retroflexion of.....	Pestalozza	643
primary growth in.....	Walthard	644

V

Venereal diseases.....	Amory	830
Veronal in vomiting of pregnancy.....	Rowland	779
poisoning	Zornlaib	780

Subject	Author	Page
Vertigo, significance of.....	Wells	593
Venesection	Mendel	779
Vesical calculus.....	Swinburne	425
Virginity of woman.....	Torre	487
Vision, binocular.....	Fergus	351
and senility.....	Gould	823
Visual organs and birth injury.....	Thomson and Buchanan..	797
Voice from the orient.....	Editorial	745
Vomiting, cyclic.....	Comby	488

W

Whooping-cough, bacteriology of.....	Albrecht	1016
statistical study of.....		869
Widal reaction.....	Goethlin	632
reaction in typhoid fever.....	Genken	693
test in typhoid fever.....	Genken	630
Wise saws and modern instances.....	Editorial	741
Woman, intellectuality of.....	Editorial	372
Wrist, congenital deformity of.....	Peckham	640
Wry-neck, treatment of.....	Gerdes	554

X

X-ray as a diagnostic aid.....	Skinner	310
treatment in diseases of the blood.....	Pancoast	699

Y

Yellow fever, organism in.....	Stimson	629
--------------------------------	---------------	-----

